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The Massachusetts Medical Society

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The Massachusetts Medical Society

SECTION OF TUBERCULOSIS

TUESDAY AFTERNOON, JUNE 5, 1928

GETTING THE CONSUMPTIVE BACK ON THE JOB

THE Section of Tuberculosis of the Massachusetts Medical Society, held in the Large Dining Room of the Hotel Bancroft, Worcester, Massachusetts, convened at two forty-five o'clock, Dr. John B. Hawes, the Chairman, presiding.

CHAIRMAN HAWES: The general subject of our meeting this afternoon is "Getting the Consumptive Back on the Job." In opening the session, Mr. Edward Hochhauser, President Altro Work Shops, of New York, will read a paper on

THE STORY OF THE ALTRO WORK SHOPS *

BY EDWARD HOCHHAUSER†

FIFTEEN years ago, a tuberculous patient in need of sanatorium care, was advised that after six months at a sanatorium, he could return to work. Today, we are told that a year at the sanatorium is excellent training and preparation, but it takes two to five years to effect a cure. To lengthen the stay at the sanatorium, as it exists today, until the patient's condition is apparently cured, would be unwise. It would complicate the problem of rehabilitation more than it would assure ultimate usefulness and well-being, and we know how difficult it is to induce patients to stay nine months at a sanatorium.

The man on the street is apt to judge health work by its fruition. Can the patient who has tuberculosis be returned to a normal life and made economically useful so as to maintain himself, and his family?

The problem is complicated by many factors in the personality, experience and education of the patient, as well as his physical condition. Fortunately a large percentage of the tuberculous make their own adjustments. Where his physical condition is good and the patient succeeds in placing himself, he is apt to be more successful than we are and the percentage of relapse is apt to be less than among our group. He usually secures a job at his old trade with much higher wages than the placement worker can secure, and we know high wages is one of the most effective cures for tuberculosis.

Among those who cannot place themselves, we find the most difficult patients, many who were unequal to the competition of the so-called normal life before they developed tuberculosis. Perhaps social workers who are our severest critics, compliment us when they expect that we will secure an abnormal response from this subnormal group. Many whom we find incompetent and illiterate are unskilled workers because they never had an opportunity to learn a trade. They require trade training as well as physical rehabilitation.

I would like to discuss briefly the problem of that large number of sanatorium graduates, who on discharge are unequal to the full-time job or whose work capacity is uncertain. Many of these patients are permitted to stay at home or forced to enter institutions because the doctor or the social worker cannot secure the work which they feel the patient may reasonably undertake. We have a mental as well as physical problem; we have a breakdown in morale, a fear, perhaps an exaggerated fear of relapse to overcome.

For many patients, there is a wide gap between sanatorium treatment and normal industry.

Light out-door jobs are myths for the most part, and where they exist are usually light in pay. Part-time jobs in industry are rare and difficult to secure, although they offer the greatest hope for the successful placement of a large number of patients.

When our Committee started to function, two propositions were considered to meet the need for part-time work. One was an industrial or farm colony and the other a factory in the city. The farm or industrial colony was disapproved. It would be a very costly experiment. The patients would have to be very carefully selected and the project would not materially help in

*Read at the Annual Meeting of the Massachusetts Medical Society at Worcester, Massachusetts, June 5, 1928.

†For record and address of author see "This Week's Issue," page 952.

the solution of the problem of our urban group. It meant moving the entire family to the country, depriving the children of the associations and the opportunities for study and advancement that the large city affords. The other proposition was that a factory be started in New York, the patient to live at home with his family and to maintain all his normal relationships. Where necessary, the family could be moved to a better apartment but always to one they could afford when the patient was finally rehabilitated.

To meet the need for graduated work and to determine whether a rounded out scheme of medical, social and industrial care of the tuberculous might reduce the large percentage of relapses, the Altro Work Shops was started in June 1915. Here the doctor is the boss as far as hours of work are concerned. He prescribes maximum hours on periodic examination. It is recognized that the family must be the unit of care to secure maximum results and experience has shown that medical care of other members of the family is almost as important as medical care of the patient himself. As part of social care, the family is assured the necessary minimum income. Where relatives are not in a position to assist, the patient receives his necessary minimum in his weekly pay envelopes. This minimum is made up of cash representing earnings, and a check for the subsidy. The patient is said to be proving out, if, in the course of time, his hours of work increase, which means improvement medically, and the cash or earnings increase, indicating improvement in effort. As he becomes proficient and his earnings increase, he is allowed more than the minimum which gives him some margin of choice and encourages him to earn more. To re-awaken his self-respect, he is treated as a sick man trying to get well and not as a dependent whose desire to work is being tried.

It was decided to pay on the task basis and never less than the union wage for similar work. At first, patients do not produce more than one-quarter to two-thirds as much as a well worker in the same hours. The patient is working hard, for during the first year after sanatorium treatment it requires greater effort to turn out half his normal capacity.

The scheme of graduated work at the Altro, which we have called industrial convalescence, is intended as a hardening process and preparation for work in normal industry.

The workshop is not organized or planned as a training school. The practice is to follow the method that enables the patient to earn quickly and to increase his earnings while "on the job." He is taught to sew on rags, this training period varying from a few hours to two days; then he is given work which requires the least expertness and is slowly graduated through various grades until he is taught the best grade of work for which he seems to have capacity. He is taught to work on the sectional basis, doing a specific part of a garment, as this is comparable to the usual factory practice. The patient is paid the union rate as soon as he can produce acceptable work.

The nurse at the factory supervises the patient at work and at rest, for he spends his working day at the work-shop resting in-doors or out-doors when not at work. The nurse is literally the welfare worker of the establishment for her concern is always the patient.

The Altro Work Shop does not look like an institution. It faces three streets, South, East and West, and 50 feet open space to the North, assures light and air on all sides. The equipment, modern throughout, with many labor-saving and fatigue-reducing features, is similar to that found in many ideal factories. A very interesting pressing arrangement is in use which sterilizes and adds to the attractiveness of the garments. Uniform making, which includes all kinds of washable garments for use in the hospital and hotel, was chosen because approximately half of the patients applying for care had come from some branch of the needle trade. The new-comer begins to earn the second day and when he regains his health he may return to his old trade or continue at the sewing trade where skilled workers can earn a living wage. Unfortunately, present day conditions in the sewing trade make it more difficult to place the factory graduates.

At first only quiescent, negative sputum cases of pulmonary tuberculosis were accepted. In 1915, phthisiophobia, the exaggerated fear of tuberculosis, was the rule; now it is much more the exception. The success of the Altro was predicated on its ability to dispose of its output. Most physicians were skeptical as to the possibility of tuberculous patients working indoors, and at the sewing trade. Economically and medically, it was wise to go slowly so as not to complicate the many problems of starting a workshop for the tuberculous, and to limit the intake to negative sputum, inactive cases.

As the workshop progressed, more advanced negative sputum cases were admitted. During the war, a study disclosed that a very large percentage (in one month 50%) of the patients leaving or discharged from a large sanatorium had positive sputa.

The workshop, at that time very busy making blouses for the U. S. Navy was exceedingly careful, going to the extreme of discharging any patient whose sputum became positive while at work. To meet the need of positive sputum patients, an annex factory was established in 1918. Because of the problem of disposing of their work, it was thought advisable to separate the two groups, but a year later they were merged and housed in the main workshop. The admission of positive sputum patients was stimulated by the criticism of a Captain of the United States Public Health Service, who is now assistant to the Surgeon General.

In 1918, and since then, to quote from a study made by the National Tuberculosis Association, the "incipient, moderately advanced and advanced cases have been employed, which included patients who showed some activity of their pulmonary lesions, a few cardiacs, a fair number of asthmatics, some chronic bronchitics, besides some suffering from bronchiectasis." "While the investigators have found it impossible to list the exact number of neurasthenics, or chronically institutionalized persons, the study has convinced them that the Altro has cared for a large group of these most difficult of all types to treat and rehabilitate."

There are a large number of patients in need of permanent sheltered employment who, because of extensive tuberculosis or complicating diseases, such as emphysema and bronchitis, cannot return to normal industry but can work part-time, often up to eight hours a day, in a sheltered work-shop. The directors of the Altro Work Shop, committed to a program of rehabilitation, believe they should limit the number of patients in need of permanent sheltered employment, to approximately twenty, which is a little more than 20% of its present capacity.

The output of the workshop is sold on value, not sentiment, to hospitals, institutions, nurses, hotels and housewives.

During 1927, approximately 92 patients earned over $80,300.00, and received as a subsidy to their wages from charitable funds, $30,500.00. The sales, the output during the year, was over $230,000.

The demonstration of the Altro Work Shop, we believe, is significant, because the fundamentals of care can be provided by large industries. Not only can relapses be cut down to approximately one-third that found in the studies of what happens to sanatorium graduates, but these men and women can be made partially, or completely self-supporting.

A very large corporation with branches all over the United States is trying to work out a plan for its tuberculous employees. The need for some plan was brought home by numerous requests for loans to start small businesses after sanatorium treatment. This company accepts its responsibility toward its employees by paying for sanatorium treatment and assisting the family during the cure period. We are trying to convince this corporation that they can take their employees back into their own organization and under medical supervision, provide carefully graduated work. They would retain skilled workers, raise the morale of their employees and secure for themselves a return on the investment in paying for sanatorium treatment and assisting the family. There are some large business organizations—Standard Oil Company of California, New York Telephone Company, and the Metropolitan Life Insurance Company that are doing this now.

In the invitation to the dedication of the new Altro Work Shops, in December 1924, we read, "The business of this unusual manufacturing enterprise is that of giving the convalescent tuberculous paid employment, and of allowing them to do only the amount of work per day for which they are fitted. A time clock and a trained nurse see to that. The balance of their time they give to development of hope in their own hearts and health in their own bodies. This turns invalids into men and men can compete in the open market, just as the wearing apparel, made by them during their working hours, competes in the open market, on a quality basis."

CHAIRMAN HAWES: Friends, I hope that you have received as much stimulation and inspiration from this visible, practicable demonstration of what can be done for the consumptive as I have. The mere fact that 92 patients, every one of them consumptives, can earn in one year $80,000, and that the sales of this shop here amounted to $230,000 in a year, speaks an enormous amount.

I hope very much to live long enough, and I know that it is not going to be very many years, to see something of this same sort started in Boston. If New York can do it, Boston can do it, on a smaller scale, and I know that that particular dream is going to come true some time.

You have heard one side of the picture. I was very glad that Mr. Hochhauser early in his remarks spoke of the difficulties of carrying on the industrial colony and named the various handicaps which were bound to be met with; those handicaps have been met and those difficulties have been surmounted, and now we turn to another phase of the picture of putting the consumptive back on the job, an entirely different one, but one which fits in absolutely with the other. There is bound to be one group that is better off here in the city near their families and friends, as Mr. Hochhauser has described, and there is bound to be another group, and I believe an increasingly large group, which will be benefited by getting out in the country and forming a little colony of their own and forming their own homes. Dr. Bayard T. Crane will now tell us what is being done in his work in Rutland. Dr. Crane.

THE PLACE OF THE INDUSTRIAL COLONY IN GETTING THE CONSUMPTIVE BACK ON THE JOB*

BY BAYARD T. CRANE, M.D.†

THE specific duty allotted to this paper is to discuss "The Place of the Industrial Colony" in the task of "Getting the Consumptive Back on the Job".

To some, the subject of an Industrial Colony is still in a controversial stage, and therefore, an adequate discussion of the subject would imply the presentation of a great deal of evidence. The discussion would necessitate full evidence in the field of economics, (individual as well as community) and in the field of medicine and would trace out the interaction of one of these factors on the other in that very unstable test-tube—the human being. Surely positive formulae would be hard to arrive at.

To discuss authoritatively this heterogeneous combination would require the space of a textbook.

I am allowed 20 minutes by traditional rules of the Medical Society!

It is out of the question in so brief a space to attempt to submit statistics on the many possible items and I have, therefore, chosen as a method of presentation to attempt to superficially cover the subject by a series of assertions and theories each backed up by some supporting evidence. Perhaps the believer will kindly imagine the balance of the necessary evidence and the non-believer is respectfully requested to ask questions and, in his case, *not* imagine the balance of the evidence.

Let us first agree on a picture of what an Industrial Colony is. The term "Industrial Colony," as here used, is defined as a group of subsidized productive occupations, sufficiently numerous and sufficiently varied in type to afford congenial and healthful employment to male and female workers who present a wide range of mental and manual competency, and who, having, or having had Tuberculosis, require a continuation of hygienic living and who are prepared to accept the medical and hygienic regulations and conditions provided by the Colony.

The term "Industrial Colony" has had the power to *frighten* certain well-developed and otherwise mentally sound acquaintances, able workers in the suppression of Tuberculosis. An Industrial Colony is, to be sure, a large undertaking. It is *not* a questionable, real-estate, profiteering scheme. Perhaps the word "Colony" suggests to some a hint that the colonist would be in danger of being impressed into a suppressed, dominated existence which would be no improvement on an exile. Really, however, it is actually simply the answer to a group of problems that seem not to have been met as well by any other method. It is merely another step ahead. It is *not* applicable *universally.*

Before proceeding with the presentation of the claims of what an Industrial Colony can accomplish it may assist the listeners to have a description of the present Industrial Colony now being operated in Rutland, Massachusetts, in connection with the Central New England Sanatorium, Inc.

The Institution has taken over one after another, four contiguous farms totaling almost 600 acres of land, roughly one square mile. This tract was selected because of its altitude of approximately 1200 ft., its possession of an extensive area sloping to the South suitable for extensive building development, because of its natural beauty, its possession of excellent farming possibilities, its proximity to a railroad (in fact a railroad station is within 1000 ft. of the Main Buildings), because of its possession of public water supply and electrical transmission lines and because it is located in a town where over 1000 persons are constantly under treatment for tuberculosis in various Federal, State and Private Institutions, and because the town is only 12 miles distant from the third largest industrial city of New England.

These features make possible in this spot what might be called a model tuberculosis settlement, wherein patients and ex-patients, with or without their families could find those numerous special conditions which are most favorable to their happiness, prolongation of life, suitable employment and economical living. This tract has had the broadest study by A. A. Shurtleff, landscape architect and town planner, and studies have been completed providing for 250 residential colonists with or without their families, in dormitories or cottages or small homesteads. Appropriate portions have been reserved for agricultural purposes such as 40 acres now given over to apple orchards, to an extensive poultry plant and the like. About one-half of the total tract, chiefly on the northern slope of the hill on which the colony is located, is in woodland. The contemplated industries are to be carried out mostly in shops which have been planned by specialists with due regard to economical management in every respect, it being possible, for instance, to bring a spur railroad track to the Shop. A central power-house, storehouse, garage and the shops are to be located in one group. The dormitories for unmarried colonists are to be located in a pleasant group readily accessible to a main refectory building. Fifteen cottages for the families of colonists are in a different group slightly removed from the dormitory group. The Industrial Superintendents and Personnel of the entire Institution are to be housed in buildings, slightly re-

*Read at the Annual Meeting of the Massachusetts Medical Society, Worcester, Massachusetts, June 5, 1928.

†For record and address of author see "This Week's Issue," page 952.

moved from the colonists in a group around a quadrangle headed by a central administration building which includes an assembly hall. The entire tract is laid out so that all traffic passes through one main artery, so that its supervision would be under the control of a ground superintendent located at the Main entrance gate. Another portion of the property, slightly removed from the previously mentioned groups, permits a very attractive colony of sixteen cottages for private patients close to a private patient infirmary. About one-half million dollars are invested in the development up to the present time. The full colony of the size described would require about two million dollars. The Institution at present has a capacity of 80 patients, and occupies twelve buildings including the farm and industrial buildings.

Whereas the majority of the patients at present are following sanatorium treatment solely, nevertheless the main interest of the institution is to assist in working out an answer to the after-care problem and the housing arrangements are such as to make it possible to use present sanatorium quarters for the colonists later as the demand for more beds by more colonists increases. The dual purpose of the institution above described is serving to determine also the wisdom or feasibility of attaching an Industrial Colony to a sanatorium. The sanatorium branch bears the greater part of the financial burden and overhead expense, and thus the Industrial Colony branch is run much more economically than as though it were an isolated enterprise. In fact, the cost of subsistence including medical supervision for men and women working patients is only $19.14 a week, even with the workers incompletely occupied.

The majority of working men and women patients are absorbed in the various departments common to all sanatoria. All the institutional personnel are not ex-patients, however, but preference is given to them over well workers. The main undertaking at present which justifies our claim to an Industrial Colony arises from our operation of a Woodworking Shop, the financial results of which will be fully discussed at the latter end of this paper. The following occupations are open to working patients:

In Woodworking Shop
Sales Manager
Purchasing Agent
Production Manager
Machine Repairer
Woodworker
Furniture Finisher

In Clerical Department
Bookkeeper
Stenographer
Telephone Operator
Multigrapher

In *Art* Department
Commercial Art

In Nursing Department
Graduate Nurse
Nursing Attendant
Ward Maid

In Domestic Department
Waitress
Housemaid

Miscellaneous

Outside and Inside Carpenter	Truck Gardening (including small fruits)
General Painter	Male Orderly
Poultry Husbandry	Chauffeur
Apple Orcharding	Dishwasher
Teamster and General Farm Hand	Library Assistant

This rather incomplete list represents twenty-six separate occupations, actually operative the first four months of 1928 and at least fourteen other ocupations are open when applicants present themselves, as follows:

Physician
Dietitian
Social Worker
Steward
Occupational Therapy Instructor
Laundry Manager
Seamstress
Gardener
Campaign Manager and Solicitor
Timekeeper
Watchman
Furniture Decorator
Designer
Handcraft Operator

making a grand total of 40 possible occupations.

The statistics of attendance in the various departments in 1927 follow:

PER CENT. OF ALL WORKING PATIENTS—1927
IN DIFFERENT DEPARTMENTS

Males		*Females*	
Woodworkers	17 or 47%	Nursing Attendants	6 or 16%
Carpenters	2 or 5%	Stenographers	2 or 5%
Clerks and Bookkeepers	2 or 5%	Multigraph Operators	1 or 2%
Poultrymen	1 or 2%	Housemaids	2 or 5%
Gardeners	1 or 2%	Total	11 or 30%
Commercial Art	1 or 2%		
Chauffeur	1 or 2%		
Total	25 or 69%		

Total Male Workers	25
Total Female Workers	11
Total Working Patients	36

Of these 36 working patients 34 had been patients in sanatoria before.
33 1/3% of these working patients were graduates of our sanatorium.
10% of all C. N. E. S. patients graduated to Industrial Colony.
Average stay in previous sanatoria of group analyzed ..... 31 mo.

Space forbids full discussion of the policy of the colony to furnish vocational instruction as well as employment.

What are the main basic facts or claims that lead one to speculate on the advantages of an Industrial Colony?

These facts and claims may be classified under the following five headings:

1st: Those concerning the Patient himself directly;
2nd: Those concerning his Family;
3rd: Those concerning the Community;
4th: Those concerning Medical matters;
5th: Those concerning Employment and Economics.

I will attempt to briefly discuss the facts and claims under each of these headings. Each separate item is noted by a marginal letter.

FIRST—FACTS CONCERNING THE PATIENT

(A) There are probably upward of 25,000 persons of wage earning age in Massachusetts who have or have had definite tuberculosis.

(B) The degree of health restoration by present methods of medical treatment in over one half of all cases is so limited that these individuals are not prepared to face average community living and working conditions.

Drolet's astonishing statistics concerning "Tuberculosis Hospitalization in the United States" show that in an analysis of 31,581 patients and (184 institutions)

15% are discharged arrested
42% quiescent or improved
23% unimproved
20% dead

End results have been compiled and interpreted in various ways. A reasonably accurate and easily remembered formula is as follows:

1/3 of all cases become well and return to ordinary employment;
1/3 of all cases become only partially well and require prolonged sheltered employment and unusually favorable living conditions;
1/3 of all cases die while in institutions or soon after.

(C) A committee of the National Tuberculosis Association known as the committee on After-care and Social Re-establishment has been at work for about ten years on the subject of what is usually called After-care. This committee with Dr. A. M. Forster as chairman includes experienced sanatorium physicians, a past director of the National Tuberculosis Association, and a large group of physicians and laymen who have had practical experience in the re-habilitation of the tuberculous. Naturally the members of this committee hold various opinions as to the best procedure to accomplish re-habilitation or social re-establishment of the consumptive, but they all agree that the time has arrived long since for some definite policy or movement to better handle this very neglected problem. One outgrowth of the work of this committee has been quite revolutionary and attention is called to this subject here, probably for the first time in New England. This committee in its recent official publication sponsored by the National Tuberculosis Association under the title "After-care of the Tuberculous Patient", has adopted a conception which is described as follows:

"There are three phases or *PERIODS OF TREATMENT* of pulmonary tuberculosis necessary to success—

The first, Absolute rest, usually in bed and applicable in a sanatorium with infirmary accommodation, a hospital, or, when conditions permit, at home. This is usually the shortest period of treatment.

The second, Rest, graduated exercise and work—best carried out in a sanatorium. A minimum of six months; usually longer.

THE THIRD, REGULATED AFTER-LIFE."

Please note that this committee has at last taken the stand that what has been known heretofore as After-care is now brought within the scope of the treatment period. It seems to me that the implication of this brief statement is really quite revolutionary. It seems to me that heretofore the sanatorium has had too large an influence in segmenting and labeling the patient's life. The sanatorium has received overemphasis for the part it can play in the patient's life. In addition the sanatorium policy is still built too much on the theory that the patient is going to regain his health and function by medical means, and the tuberculosis program as a whole must be re-constructed as to the relative importance of the different steps in the consumptive's life and especially do something far more for what has been called the after-care period.

Difficulty of Homes Supplying Hygiene

(D) The average home finds it a hardship to provide the necessary hygienic elements, to the patient that has returned home from a sanatorium. On the other hand, the Industrial Colony can meet the requirement almost perfectly.

Hardship on Ex-patient from Location of Usual Industries

(E) Most commercial industries are located with little or no consideration for the physical welfare of the workers as regards to atmospheric cleanliness, ground dampness and proximity to workers' homes. On the other hand, the Industrial Colony can select its location so as to remove all of these health hazards.

Occupations Hazardous to Health

(F) While many occupations are unsuitable to the ex-patient because of confinement, irritating dust, crowding of workers, lack of fresh air, overheating, over-exertion, or exposure to the elements, these hazards can be rectified in an Industrial Colony by careful selection of occupations.

Accuracy of Physicians in Prescribing Work

(G) It is the exceptional physician who is sufficiently familiar with the nature and process-

es of industries to be able to accurately prescribe suitable work in suitable amount, whereas in the Industrial Colony the permanent resident physician has an excellent opportunity to have observed the effect of the various processes in the industries of the Colony upon the workers and he therefore can perform the responsibility of prescribing work more accurately.

SECOND—*There are certain facts or theories* CONCERNING THE FAMILY *which bear upon the Industrial Colony*

Separation of Family and Patient in Sanatorium

(A) Separation of patient from the members of his family is a frequent cause of patients leaving sanatoria before it is wise. The Industrial Colony provides model homes for suitable families in the Colony so that more frequent family assembly is possible under regulations. The value of at least occasional parental contact with children is of great importance sociologically.

Social Service to the Family

(B) In the Colony all the elements of home life are open to study of social workers so that financial assistance to the family can be prescribed with increased accuracy.

THIRD—FACTS AND THEORIES CONCERNING THE COMMUNITY

Longer Segregation Possible

(A) Segregation of the consumptive is advantageous to the community. The Industrial Colony increases the length of the segregation period by appealing to the patients psychologically, hygienically and economically.

Equipment Necessary to Liberate Patients' Productive Ability

(B) Patients in the stage of convalescence who are not provided with opportunities for productivity are unintentional economic liabilities to the community. This artificial unproductiveness may be protracted for years in chronic fibroid cases confined to ordinary institutions and to unresourceful homes. The Industrial Colony, however, is alert to broad economic laws and therefore stimulates productiveness and also is so organized that a wide range of equipment and trades is available so as to make possible the expression of many kinds of productiveness.

Colony Children Exposed to Tuberculosis

(C) The children in the Colony who have been exposed to tuberculosis can be studied and regulated with almost as much accuracy as though they were in a preventorium, while, at the same time, they have not been separated from the well parent.

(It is of course compulsory for a parent with positive sputum not to reside with the family.)

Employment of Well Members of Family in Colony

(D) The well members of the patient's family are eligible to employment in the more strenuous branches of occupations in the Colony.

Family Income Increased at Earliest Moment

(E) Experience has proven that the Industrial Colony and other forms of sheltered employment are aids to the family and community economically in comparison with other known systems because they utilize the patient's productivity at the earliest time.

FOURTH—FACTS CONCERNING MEDICAL MATTERS AND AFFAIRS

Compulsory Examinations to Industrial Colonists

(A) Tuberculosis has a subtle, insidious character so that the patient is easily deceived as to his ability to work. Hence the patient outside of an institution is apt to make changes in work without consulting a physician sufficiently frequently. In the Industrial Colony, however, these defects are minimized by the practice of compulsory supervision and frequent physical examinations by expert physicians.

Desirability of Prolonging Hygienic Life For Therapeutic Reasons

(B) Drolet's statistics based upon an analysis of 96,000 patients in tuberculosis institutions in the U. S. in 1925 showed the following as regards length of stay.

Under one month	17%
One to three months	24%
Three to six months	22%
Six to nine months	16%
Nine months or more	21%

He wisely states "If sanatorium treatment or hospital care is to be effective, it must be given over at least a fair period in so chronic a condition as tuberculosis. The study reveals at once that in an unfortunately large proportion such an opportunity is not seized. *More than 40% of all patients remain in Sanatoria or hospitals less than three months.*" He notes that in certain large hospitals 24% of all patients remained less than a month, whereas five sanatoria had lost only 7% of their patients in the same period. *It is my impression that most sanatoria are making few progressive improvements of policy and that in general the sanatorium is so entrenched as to be too self-satisfied with its system. It is a fact that the length of stay of patients is lamentably short and little progress has been made in overcoming it.* The Industrial Colony idea in actual practice, however, is known to be able to prolong the treatment period. In 1927 the average length of

stay of all working patients in the Industrial Colony of the Central New England Sanatorium was eight months and 15 days. At Potts Memorial length of stay is nine months and 20 days.

It is to be noted that our working patients had previously spent considerable time in other sanatoria, and had left in most cases because sanatorium treatment had become irksome. *This evidence would seem to point conclusively to the great value of an Industrial Colony in prolonging treatment.* It has been mentioned heretofore in this paper that the appeal of the Industrial Colony to the patient seems to develop from the policy of financial reimbursement to the patient for work performed, vocational instruction, relaxed rigidity of disciplinary rules, reduction of air of invalidism, mental diversion by work, and an attempt in general to look out through the patient's eyes on all his problems.

(C) The efficient Industrial Colony has a broad personnel including resident social worker, dietitian, occupational therapist as well as a competent nursing and physician force. X-ray and laboratory work are also called for.

Physical Tryout or Hardening up Process

(D) Theoretically it is part of a sanatorium program to carry the patient through sufficient physical fitness for his future occupation, but it is obvious, since the patients remain in sanatoria such a short time, that the physical tryout cannot be made with any uniformity. *Large numbers of patients leave, therefore, without any adequate functional test. In large numbers of cases there is absolutely no other means of knowing the patient's real preparedness to work or his endurance except through a physical tryout.*

On the other hand, an Industrial Colony attached to a sanatorium presents an almost ideal means of conducting this physical tryout or hardening up, especially since the Industrial Colony with its great variety of occupations can conduct the physical tryout under occupational conditions which resemble those of his future occupation, whatever that may be decided to be. *In my opinion this is the most precise and economically sound means of meeting this problem which is possible at the present day.*

FIFTH—FACTS CONCERNING EMPLOYMENT

About 33 1/3% of all cases of tuberculosis under treatment at any one time will be arrested and comprise the cases which are most likely to return to full time work under average conditions.

Another 33 1/3% are so ill as to render later employment improbable or impossible.

The Precarious Third

The remaining 33 1/3% have precarious health and if employed at all require part-time work within their strength.

Organized Labor Does Not Assist Part-Time Employment

(A) A very impressive fact is that organized labor has no policy favorable to the idea of part-time employment. If part-time employment, as a principle, is desirable, it will receive no encouragement or assistance from organized labor.

It follows, therefore, that as far as organized labor is concerned, part-time employment must be provided elsewhere. *The need of a subsidized industrial colony is apparent as far as organized labor is concerned.*

Lack of Help from Workmen's Compensation Laws

(B) Workmen's Compensation Laws in Massachusetts generally are hostile to granting subsidy to persons incapacitated with tuberculosis. An employer cannot be forced to grant financial assistance to the tuberculosis patient, and even if he has granted it during the sanatorium stage, he is apt to withdraw it when the patient leaves the sanatorium. *It is the general assumption, usually unjustified, that the patient is able to go to work and support himself.* If the patient belongs to the "precarious third" of the cases, his incapacity is apt to be a boomerang to close the door of his former occupation, and force him to attempt other employment. *The dilemma to find a "suitable job" has been the curse to this class of patients and no systematized organized comprehensive solution has ever been presented equal to the Industrial Colony with its slogan of sheltered employment within the patient's strength and sympathetic custody of the worker's physical welfare at the same time.*

The principle of Compensation which is granted to ex-service men, if freed of politics, should be applied to deserving civilian disabled tuberculous workers, but until such aid to subsistence is granted the disabled part-time tuberculous worker is left without the means of meeting his obligations and again the subsidized Industrial Colony would make up for this lack in Compensation Laws.

The following is quoted from a pamphlet on

Sheltered Employment for the Tuberculous in the United States

By H. A. Pattison, M.D., and Philip P. Jacobs, Ph.D.

"Both the patient and the community as a whole are asking, oftentimes anxiously, whether the industry or industries of the community which were responsible for the breakdown of the patient in the first instance, should not be held largely or wholly responsible for this man's readjustment to a new position. Wisconsin has recognized this fact in that it has made tuberculosis a *compensable disease* under the state compensation law, and other states are following this example. It is doubtful if tuberculosis should be classed as a strictly occupational disease, but in a large percentage of instances the disease is superinduced by faulty working conditions. The

responsibility of industry, therefore, is one that cannot be ignored."

Attitude of Employers to Disabled Employees

(C) It is a rare exception to find an employer—whether individual or corporation—having a policy of proffering subsistence and salary to any and all persons found to be tubercular and however generous or charitable they may be while the patient is in a sanatorium, it is extremely rare that subsistence and salary is continued to the stage of part-time employment.

The policy of our Industrial Colony is to furnish a liberal wage sufficient to average $1.00 or $1.50 per day over expenses so that obligations to family are partially and occasionally liberally met.

The Industrial Colony furthermore, can and does, grant its liberality regardless of length of employment and other rewards of labor, on the strict moral and physical and sociological merit of the case, keeping a sharp eye on the requirements of members of the patient's family, operating on the slogan that tuberculosis is not a problem of the patient solely, but rather that the family is the unit of consideration. Social workers on the staff and ultimate co-öperation with other interested welfare agencies is a fixed part of the Industrial Colony policy.

Training for New Job When Former Job Was Hazardous

(D) There are certain occupations definitely hazardous to the tuberculous. Patients who have been employed in them must find something more suitable to do.

The Industrial Colony policy favors a study of future occupational fitness while the patient is still in the sanatorium and the forehanded discussion of suitable future jobs and a preparatory study while in sanatorium, and finally graduation to the Industrial Colony and apprentice training there for selected occupations. Theoretical instruction can be combined *economically* with practical instruction to groups of about 12 students. Heads of departments in an Industrial Colony should be chosen partly for their teaching abilities.

Young Patients Without Trade Training

(E) The group of young persons who acquire tuberculosis during school age, and who are, therefore, prevented from trade experience, are faced with a dilemma on leaving sanatoria. *Their families and they themselves are apt to be over-anxious to earn something, to get money and as much of it as possible, notwithstanding their lack of practical trade knowledge and perhaps lack of work sense. The Industrial Colony is a fortunate haven for them in view of its furnishing trade training and financial reimbursement.*

Vocational Rehabilitation

(F) "By an Act of the Legislature effective 1921, the Commonwealth of Massachusetts accepted the Provisions of an Act of Congress to promote Vocational Rehabilitation of persons as disabled in industry and *otherwise* and their return to civil employment. In this purpose, the State Board for Vocational Education are directed to *establish* and maintain or to assist in establishing and maintaining such courses as it may deem advisable and necessary".

"Vocational Rehabilitation means the readjustment and return of the handicapped individual to his proper place in the productive forces of the day. This training is offered free of charge and affords the handicapped person the opportunity to re-establish himself. . . . It is in a sense an extension of the public school system."

"The services are available for any resident of employable age who has a physical disability which is a vocational handicap and who reasonably may be expected to be fitted for remunerative employment. The physical disability may be the result of an industrial accident or it may be the result of a disease or defect existing from birth. But the following cases are excluded among others:

Any inmate of a State Institution."

Whatever training is necessary is provided, and finally the person is placed in the occupation for which he was trained. The training may be any one or more of the following forms:

Institutional Training in Trade, Technical, Agricultural or Commercial schools.

Employment Training (often the most feasible) on the job, in a factory, shop or commercial establishment.

Correspondence Training in correspondence courses.

Tutorial Training.

"Financial aid for maintenance during rehabilitation for such persons as are deemed able to profit by training" is among the services rendered:

The co-operation of hospitals is solicited.

"The Capital of organizations who can develop employment opportunities to the handicapped will be especially helpful."

Strangely enough the number of disabled tuberculous persons who make use of this service is quite small.

It is my personal opinion that this is due to several items:

1. Inmates of State Sanatoria not eligible.
2. General lack of knowledge of such a service.
3. Unpopularity of such training among expatients unless combined with liberal financial income at same time.
4. Possible infeasibility of disabled persons attending school.

Conclusions

Under existing conditions, Industrial Colony would seem to offer as appealing a rehabilitation system as this system by virtue of its combined interest in technical instruction, practical

training, money reimbursement and health supervision.

If sufficient numbers of students were resident in a colony, a school should be established which might come within the approval of the State Department of Vocational Rehabilitation and thus share in whatever subsidy advantages there are in the State Policy of Rehabilitation.

Insurance Company Contact with Disabled Tuberculous

(G) My familiarity with this subject is not extensive. Certain Insurance Policies carry Partial or Permanent Disability clauses which supply stated monthly income per thousand of insurance carried.

It is clear that the earliest possible return to employment of the disabled tuberculous person would be advantageous to the Insurance Company, and hence the Industrial Colony which fosters employment even if merely part time would logically be considered to be popular with insurance companies. *It might be that this aid would be so popular to insurance companies that they might be liberal with grants to the Industrial Colony for different features of the Industrial Colony and thus aid the part-time workers.*

(H) Brief reference and great credit must be given to the Papworth Colony in England near Cambridge where Dr. Varrier Jones has proven the feasibility of an Industrial Colony by several years of operation. A revolution in England took place in the care of the Tuberculous since now a patient can be subsidized by national funds. At Papworth Colony, of 500 to 550 patients, all are under the jurisdiction of a sympathetic employer. He feels that 10% of the patients discharged from any given sanatorium should be cared for by some form of adequate after-care or sanatorium extension service.

(I) The following six conclusions are quoted of a total of 22 in a Report by the Medical Officer of Health of London.

Employment of Tuberculous Patients
From March (1928) Bulletin
of
Canadian Tuberculosis Association

A report by the Medical Officer of Health to the London County Council states in the twenty-two conclusions made by Dr. F. N. Kay Menzies:

"(3) Speaking generally, the working capacity of the tuberculous person whose disease is not arrested is not more than 50% of the normal person.

"(6) The loss of efficiency of the tuberculous worker can be made good to some extent by the use of labor-saving methods.

"(7) Wherever possible, a tuberculous person should seek for an employment for which his previous experience fits him. The best course as a rule is the return, perhaps under modified conditions, to his usual employment.

"(12) Under any circumstances a commercial undertaking employing tuberculous employees and paying a wage adequate for their maintenance cannot be run without considerable loss and must be subsidized in some way.

"(14) Present experience suggests that an industrial settlement run in connection with a sanatorium is more easily organized than an independent workshop, but such industrial settlements are very costly to establish and can only find employment for a small number of carefully selected cases.

"(16) It has not so far been found possible to provide the benefits of regular work at a cost which allows of an employment scheme being considered as a practical policy for general adoption."

CASE REPORTS

It is impossible, because of the lack of space, to submit sample case reports dealt with in our Industrial Colony. Speaking generally, the breakdowns have been only slightly more numerous than is the normal casualty experience with tuberculosis even under conditions of rest. Patients have gained as much weight as in the average sanatorium, have improved in strength and appearance and in general have been contented. The percentage of cases in the various stages of the disease is about identical to the records of the average sanatorium. There have been positive and negative sputum cases. *Not over 5% of patients have been prepared to contribute anything financially toward their maintenance whenever their work failed to be sufficient to pay their way. Fully one-half of the patients were extreme problems because of lack of work experience or incorrigibility, or strange social conceptions, or the like, and yet the Industrial Colony system succeeded in holding and satisfying most of these problem cases to the surprise of family, social workers acquainted with the cases and others.* Financial arrangements have been individual with each case.

There has been a frequently recurring mental attitude in many of these cases which could be explained only as an emotional outburst expressing a primal right to existence, with a reasonable degree of happiness and creature-comfort, regardless of the source of the funds which make these things possible. If an attempt is made to dissect this emotional outburst, it will usually be found to be a rebellious reaction of the individual against certain economic practices and general customs, too intricate often for the person himself to recognize. This type of conduct has happened so frequently, and in sufficiently varying types of individuals as to force me to feel that the lot of the tuberculous person, especially the male adult, after long invalidism, runs counter to an instinctive right to possess a reasonable degree of creature-comfort, and material ownership.

The conclusion to be drawn is that society should be expected to provide more liberally and more understandingly for him. There is a danger to society in disregarding these rebellious emotions because this person is a free agent and can return, if unsatisfied, to his home and the haunts of men and spread a disastrous disease to others, or in desperation can throw off dictation and reasonable restraint only to

break physically and become again a heavy financial liability to others.

SUBSIDY OR EQUIVALENT

In our Institution it is within the right of the Medical Superintendent to meet the attitudes of the patient by reduction of his board so as to leave him a surplus necessary for his meagre needs and also leave something for his family if his responsibility to his family is compelling. This amounts to a subsidy. The equivalent of a subsidy has been brought about in the case of the Woodworking Shop by payment of high wages, the average salary having been about 58c an hour whereas the actual value of work performed has been 30c per hour.

RESULTS OF OPERATION OF WOODWORKING SHOP

Results of operation of Woodworking Shop for one year show:

An average weekly per capita deficit of	$24.64	
The average subsistence cost per capita was	19.14	
Total Debits		$43.78
As Credits against this total there are the following items:		
Average weekly amount per capita paid for board and treatment by workers to institution	$13.13	
Average weekly net earnings per capita above amount paid by patient for board and treatment. Worker has for own or family use	7.46	
*Total average weekly earnings per capita		$20.59
Average number of hours work per day was six and a fraction.		
Deducting total Credits from total Debits yields an		
AVERAGE WEEKLY TOTAL PER CAPITA DEFICIT TO COMMUNITY OR SOCIETY IN GENERAL		$23.19

*NOTE—In April, 1928, in 1,004 industries in Massachusetts reported by the Statistics Department of Labor and Industries, the average weekly earnings for males was $29.04, for females was $16.25.

FINAL COST TO COMMUNITY

This figure represents the amount of money which the community has advanced over and above the patient's earnings to conduct this experiment. The average per capita cost of weekly maintenance in 198 institutions representing 32,073 beds throughout the U. S. in 1925 was $21.60.

The majority of our colony patients would have otherwise been sanatorium patients somewhere costing the community on an average $21.60. In our colony they were given medical treatment, vocational or trade training and the community was benefited by their segregation and the patient or family received about $1.50 a day in funds for their own use over and above their board.

FINAL CONCLUSIONS

The claim is here made as a result of these figures that a new industry can be set up in connection with a sanatorium under a sanatorium staff so as to offer even, in its first and worst year of operation, results advantageous to patient, family and community in terms of prolongation of life, physical welfare, segregation, contentment, finances and trade training. The business problems will be slowly solved and the deficit gradually reduced.

Lastly, all other occupations in the colony including subsistence deficit of the patient ran at a net weekly per capita deficit to the community of only *$1.29*

By averaging all occupations including subsistence deficits, the net weekly per capita community deficit is *$12.24*

Explanatory financial analyses follow.

FINANCIAL RESULTS OF OPERATION OF INDUSTRIAL COLONY (INCLUDING SUBSISTENCE) THE CENTRAL NEW ENGLAND SANATORIUM, INC.—RUTLAND, MASS.

(Period: January 1 - May 1, 1928)

		Woodworking Department		*All Other Departments Combined* (including Poultry, Farm, Clerical, Domestic, Nursing, Chauffeuring, Etc.)	
DEBITS:					
(1)	Average Weekly Subsistence Cost Per Capita	$19.14		$19.14	
(2)	Average Weekly Industrial Deficit Per Capita	24.64		.....	
			$43.78		$19.14
CREDITS:					
(1)	Average Weekly Amount Per Capita Paid for Board and Treatment by Workers to Institution	$13.13		$13.94	

(2) Average Weekly Net Earnings Per Capita Above Amount Paid by Patient for Board and Treatment. Worker Has for Own or Family Use	7.46	3.91	
(3) Total Average Weekly Earnings Per Capita		$20.59	$17.85
Average Weekly Total Per Capita Deficit to Community or Society in General		$23.19	$1.29
Average Weekly Per Capita Total Deficit to Community (or Society in General) from Operation of All Industrial Departments Combined Plus Subsistence Deficit		$12.24	
Note:—Average Weekly Per Capita Deficit to Institution Itself (Total Debits Less Receipts for Board and Treatment)	$30.65		$5.20

CHAIRMAN HAWES: Any attempt to condense such a discussion as involving this whole realm of industrial colony is a difficult one. Dr. Crane has given us enough to show first that it is a practical, genuine, real, going concern which he has up there at Rutland. We have heard so far what is being done in the city and what is being done in the country. How is all of this going to be made available to the patient? That is the next problem and perhaps the biggest problem of all three.

During the seven or eight years that I have been in charge of the Boston Tuberculosis Association we have had a Placement Committee, which appeared to me more human than all our committees. I was the first chairman, for two years. Later on, Dr. Linenthal took my place. The Placement Committee, of which ours is an example (and every tuberculosis association in any large community should have a Placement Committee) is simply a means to pick out those individual consumptives who have been through the game at the sanatorium and get them back at the job, whether it is a place like the Altro Work Shops or the Industrial Colony of Rutland, or somewhere else.

Dr. Linenthal will tell us something about the placement work of the Boston Tuberculosis Association. His paper is entitled, "The Work of the Placement Committee of the Boston Tuberculosis Association." Dr. Linenthal.

THE WORK OF THE PLACEMENT COMMITTEE OF THE BOSTON TUBERCULOSIS ASSOCIATION*

BY HARRY LINENTHAL, M.D.†

I AM sure that you will regret with me the fact that because Dr Hawes is presiding at this meeting he didn't feel that he wanted to present the work of the Placement Committee of the Boston Tuberculosis Association. He, I am sure, could give you a much more adequate account of the work, inasmuch as he instigated it and is responsible for it.

The energies that have been directed in the fight against tuberculosis have in the past been along two known channels, first, the education of the public, and second, the education of the physician in the early diagnosis of the disease and the most effective methods of treatment. In recent years, however, we have come to realize that the discharge of a tubercular patient from a sanatorium or from the care of his physician with disease arrested does not complete the job. It is necessary to have the follow-up work to see that the patient is discharged back to conditions where his health can be maintained, where there is no danger of having the disease become active again and that his living conditions are not such which originally may have been factors in precipitating his disease.

For the consumptive wage-earner, the most important factor in maintaining his health, after he is discharged from the sanatorium, is to be sure of economic independence, of having him feel that he can go out and take his place in industrial life, and that he is able to provide for himself and for his family.

How to bring this about for the discharged wage-earner is a very vital problem, and not an easy one. The modern method of treating the tubercular patient in sanatoria, where the patient is kept for many months at absolute rest, long after all his symptoms have disappeared and when to all intents and purposes he feels perfectly well, is apt to be somewhat demoralizing to his character. He may develop habits of idleness; it may break down his moral standards, or the patient may acquire a fear of work

*Read before the Annual Meeting of the Massachusetts Medical Society, Worcester, Massachusetts, June 5, 1928.

†For record and address of author see "This Week's Issue," page 952.

which is not uncommon, and in spite of all assurance by the physician that he is in perfectly good condition, that he can go out and earn his living, he still has the fear that his health might break down. We can realize how inadequate it is under such conditions to give a general admonition to the patient, when he is discharged from the sanatorium, that he can go back to some light job or get some light outdoor work. Such advice is, of course, hopelessly inadequate. What we need is a trained person, a social worker, who should be thoroughly familiar with every aspect of the problem. The worker should have an intimate knowledge of a great many factors, all of which have to be co-ördinated in order to achieve results.

This placement worker, must first of all, for instance, be thoroughly familiar with the physical condition of the patient, obtained from the physician or from the sanatorium from which the patient has been discharged; she must know exactly what his physical status is, know his physical limitations as to what kind of a job he might take. Of course she is to be thoroughly familiar with the patient's social conditions, with the urgency of his needs, with his suitability for different kinds of work, and with his previous industrial history.

In addition to an intimate and accurate knowledge about the patient, she must know what the industrial resources of the community are for the employment of patients discharged from sanatoria. She must, of course, be familiar with the different occupational hazards and with the conditions under which work is carried on in establishments to which patients might be sent, for it is not uncommon to find an industrial process, in itself free from danger, perfectly suitable for the discharged patient to work in, and yet have that process carried on under conditions which make it entirely unsuitable.

The placement worker must further carry on an educational campaign among employers of labor to show them that by giving employment to patients they are not only rendering a tremendous service to the community but that it can be done without any economic loss, that they can employ these patients as profitably as they employ healthy persons.

In certain quarters there is still a hesitancy and fear of employing tubercular patients. Some of these difficulties are of our own making. In our campaign of education we have exaggerated a bit the danger of contact infection, with the result that employers of labor as well as fellow workmen will object to anyone who has had tuberculosis, who has been in a sanatorium, coming back on the job. It is the duty of this placement worker to carry on an active educational campaign to overcome these difficulties.

This, you see, is a pretty big job. In spite of the tremendous importance of the work, there was not in Boston any organized systematic effort to carry it on until 1923. It is obvious from the fact that the placement worker must have such general knowledge of economic and industrial conditions and from the fact that there are so many agencies involved that are handling tubercular cases, that no single sanatorium could undertake the general work of placement, such work has to be carried on by a central body who could co-ördinate all factors involved who could be in touch with all the agencies and handle the patients as they are discharged from all sanatoria or from private physicians.

The logical organization to carry on this work was the Boston Tuberculosis Association. The Association, in accordance with its traditions of initiating any new work that would help to deal with the tuberculosis problem, assigned one of its workers for part-time work for the Placement Committee. The Placement Bureau was thus created under the leadership and stimulus of Dr. Hawes. Mrs. Anna M. Wright was the one who was assigned to the work. Her first activities were directed to interest in this problem all agencies dealing with the tubercular patient—physicians, sanatoria, hospitals, and welfare agencies. She has been eminently successful and the work has grown very rapidly, so that in 1924, less than a year after she started her work, she was giving full time to it. I shall not weary you with detailed statistics, but in general I might mention that in 1924 there were 120 applicants referred to the placement worker from various sources—sanatoria, welfare agencies, physicians and friends of the Association. The number has increased. In 1926, there were 343 applicants. The number fell down somewhat in 1927, owing to the fact that Mrs. Wright was ill and resigned, but the work is being re-ëstablished and since the beginning of this year, two workers are giving their full time to the placement work.

One of the difficulties that was found in placing applicants was the fact that the placement worker could not get, in all instances, a detailed and accurate statement of the patient's physical condition. If the patient was recently discharged from the sanatorium she had the sanatorium record to go by, but in many instances the patient hadn't had a physical examination for some months and it was rather difficult to determine whether the patient was fit for work. Moreover, after the patient was placed on the job, it was, of course, essential that a periodic physical examination be made so that any possible recurrence of the disease might be detected. These periodic examinations are of course in the interest of the patient, but they also give an assurance to the employer that there is no danger that the person whom he has employed will get a relapse of his disease without the condition being recognized.

To carry on these examinations a clinic was established last year under the direction of Dr.

Millet, where the applicants for placement are carefully examined, and those who had been placed on jobs are asked to report at periodic intervals for re-examinations. This makes the work of the Placement Bureau very much more satisfactory and a more careful checkup can be kept on those who have been placed.

To estimate the work of the Placement Bureau of the Boston Tuberculosis Association it is not sufficient simply to give statistics as to how many cases have been handled. There are many intangible results which cannot be tabulated in statistical form. The constant contact between the placement worker and employers of labor, the sending out of circulars to employers of labor, as has been done by this committee, is an educational work and will increase gradually the available industrial resources for this group of cases.

There is just one other aspect which I wish to mention and that is the fact that the mere existence of an agency that handles the problem, so that the patient in a sanatorium knows that when he is discharged he has someone to turn to to help him place himself, gives him a new hope and a new power to fight the disease which we know is a very important factor in the arrest of the disease. So that I think it can be stated that the placing of the discharged sanatorium patient at a job is a very effective therapeutic measure for the person who is still taking treatment in a sanatorium. (Applause.)

CHAIRMAN HAWES: We are very grateful to Dr. Linenthal for having described the work of our Association. At the present time in the midst of the industrial depression we are going through, of course you can all realize it is an extremely difficult thing to place well people, and so it is excessively difficult to place those who are sick. We are depending very largely upon Dr. Crane to take care of our people, and he is co-öperating perfectly splendidly with us.

In discussing this subject, I have asked a group of men of widely different fields of work to speak of it from different angles. First I have asked Dr. Robert S. Quinby of the Hood Rubber Company if he will open the discussion.

DISCUSSION

DR. ROBERT S. QUINBY, Service Manager, Hood Rubber Company, Watertown, Mass.: *Mr. Chairman*—The various phases of this subject have been so admirably presented that little remains for discussion. During our experience we have had the hearty co-öperation of some of the agencies described and I can attest to their value.

Rather than reiterate or attempt to discuss the material that has been presented it seems best to outline certain of our activities dealing in a general way with the broader subject of the Control of Tuberculosis in an Industrial Group. Over a period of nearly seventeen years we have been attempting to improve the health standards of a group of employed people ranging from 6,000 to 10,000 in number.

Many interesting and complex health and employment problems present themselves in the course of such an experience, among them is the problem of tuberculosis.

The problem of returning the consumptive to his job is in such an inclusive health supervision program preceded by several other important phases. These logically are:

I. Preventing insofar as possible the employment of tuberculous individuals.

II. Discovering as promptly and certainly as may be, cases developing within our employed group.

III. Supervising and directing the treatment of diagnosed cases.

IV. Deciding when cases are returnable for employment and providing optimum conditions for the re-employment of arrested cases.

In order to make this entire program understandable it seems best to elaborate briefly on each of these steps.

For twelve years we have physically examined all applicants for work before accepting them for employment. The discovery of tuberculosis among such applicants is one of our most important tasks. When discovered it is our obligation to prevent the entrance into our plant of a menace to the health of fellow employees. It is also our obligation to advise and help such an individual to seek and secure early and proper treatment. We attempt to do both of these things.

We have several correlated methods of attaining the second stage of our program,—the discovery and diagnosis of such cases within our employed group. The first is through re-examination of our present employees. Several thousand such re-examinations have been made annually. The second is through constant observation of all cases coming to our dispensaries for various sorts of treatment. Over 60,000 such treatments are administered yearly. This, of course, gives wide opportunity for the detection of tuberculosis among our present workers. Our third agency for discovery develops through our practice of visiting all absences on the second day and keeping in contact throughout disability with all cases of sickness or accident. Trained nurses make the initial visits. Their investigations are supplemented by physicians in cases of disability. Fourthly, there are many casual sources of information, such as physicians attending employees, or their families, hospitals, social agencies, district nurses, etc.

In dealing with the problem of treatment of diagnosed cases we largely use existing agencies. Frequently we employ consultants to confirm our findings and advise us as to the best method of procedure. Our good friend, your chairman,

Dr. Hawes, has frequently been of great assistance in guiding us. At one time or another we have had cases under treatment in different parts of the country and under various treatment environments. Generally speaking we prefer sanitarium treatment in Massachusetts, finding that our results have been more uniformly good locally than elsewhere. Because of the small number of current cases, seldom more than three or four under active treatment, and because of the admirable existing facilities of treatment we have never seriously contemplated creating sanitarium facilities of our own as have a few other business organizations.

We now come to the last of our sequence of problems in the supervision and control of Tuberculosis. This is the problem of "Getting a Consumptive Back on the Job." Assuming the case to be quiescent, no longer a menace to fellow workers and physically able to assume reasonable work, we are faced with the question of his re-employment.

Automatically our problem reduces itself to a considerable extent because of the fact that many people decide for themselves, or their doctors advise them to take up some other vocation. Frequently too, there are those of brief employment and relatively little skill who from choice seek other employment. We then have remaining a small number of current cases to be re-absorbed in our employment. In the case of clerical workers the problem is ordinarily simple. Working conditions are favorable and the element of physical work does not complicate. Ordinarily it is possible to return such an individual to his previous employment successfully. In the case of factory workers questions of advisability arise. What is the nature of the work in which this individual is the most skilled and most naturally employable? What is the nature of the environment surrounding this work? Is it probably favorable to the individual's future health? There are very few, if any, departments in our factory to which a worker may not return without menace to his health. With the large number of varying types of jobs in our plant it is usually quite possible to find a work environment compatible with the probability of safety. This is what we seek to do. Our low recurrence rates through the years indicates that we have been reasonably successful. We keep a constant check-up with these returned cases and if we find any unfavorable developments, we seek by the most direct method to promptly remedy the situation. We have not found it highly difficult to re-absorb cases developing within our employment as well as a certain number arrested cases coming from other employments. The question resolves itself largely into a constant and vigilant check-up of such returned cases and any suspicious new cases.

Numerically our tuberculosis problem is not large. During the last seven years with an employed force averaging about 8000 we have ordinarily had three or four active cases under treatment. We have had currently a varying number of suspicious cases under observation and a varying number of returned cases also under observation. It might interest you to know that during these seven years disability from all forms of tuberculosis has been the thirteenth most important cause of lost time among our workers. During this time our employees have averaged to lose yearly only .007 days on account of disability from tuberculosis. The total amount of time lost yearly from all forms of sickness has averaged only 4.8 days per person.

CHAIRMAN HAWES: The question of employment, whether it is the employment of the well or the employment of the handicapped, is to a man who is running an institution a most vital one. I have asked Dr. Emerson if he will give us the benefit of the experience he has had at Rutland for a good many years in handling this problem.

DR. ERNEST B. EMERSON, Rutland, Mass.: *Mr. Chairman, Members of the Tuberculosis Section*—I think that the work that is being done in Boston is a most excellent step, and I hope to see a closer co-operation between the sanatoria and these other working agencies. It has been intimated here that in a measure the sanatorium has fallen down in the treatment of its patients and in getting them on to the job. I think the sanatoria have to plead guilty. I think in the past sanatorium treatment has been carried out in many institutions in a very haphazard, slipshod sort of way, and I feel today that there are many sanatoria—not in Massachusetts—which are nothing more nor less than boarding houses.

Getting the patient back on the job begins with the family doctor; an early diagnosis and getting the patient under treatment. I believe thoroughly in placing him under sanatorium treatment early rather than as a last resort. Sanatorium treatment is not merely putting the patient to bed and giving him a rest; it is teaching that man why he is supposed to stay in bed, why he has a tray brought to him, why he is allowed an hour of exercise, or why he is given a quiet hour in the afternoon. I think the educational feature is the most essential and must be put over so the patient will understand the why of this, that, or the other thing, that the treatment of tuberculosis does not end in the sanatorium, and that treatment is essentially a mode of life. He must get into his mind that the treatment must continue after leaving the sanatorium and that if he is to be successful he must lead a certain mode of life and learn to adjust himself to a definite handicap.

Our treatment in Rutland is based primarily on rest, and as intimated by Doctor Crane, there are three periods of treatment: the first is education; the second is when we begin to exercise the patient, and we begin to exercise the patient

when we sit him up in bed, and we continue the education; the third period is a regulated life after he leaves the sanatorium.

The education in Rutland is to teach the patient how to live and begins in the admitting ward. He receives instruction from the admitting nurse and from the physician at the time of examination. We have run for a number of years a series of talks in the assembly hall. We have just finished our course of thirty lectures. The instruction includes the symptomatology, pathology, the X-ray findings, the treatment, and the why. We do not hesitate to tell the patient that he has a cavity. He may go up in the air over it, but it is very easy to explain that cavitation is a part of the disease and to allay any undue fear. If he has a rough idea of what is going on, he is in a better position to care for himself. The why is very essential if we expect any degree of co-öperation or any permanent results.

I think the sanatoria can do much more than they are doing. I think we can do much more in Rutland today than we are now doing. We are a long way from being a hundred per cent. I don't know that we will ever reach a hundred per cent, but we are aiming that way.

It is particularly important to teach these patients why this and why that, and if they understand why, they co-öperate better in the sanatorium, and the better patients they are in the sanatorium, the better they are going to do for themselves on the outside.

I think the workshop in New York and the industrial colony in Rutland are essentially pioneering work. So far as it goes, it is a step in the right direction, but there still remain 50,000 patients who can by no chance take advantage of the colony. There again it is up to the sanatorium man to educate his patients and to put them into the communities so that they will understand why they do this and why they do that. In other words, teach them how to live.

I can't allow Doctor Crane to get away with the idea that he is altogether a pioneer in working patients. That credit goes back to Rutland and to Doctor Bowditch who instituted the working of patients twenty-five or thirty years ago, by allowing patients to work part-time for their board. The part-time work with pay has been eliminated. We are, however, prescribing work as a part of the treatment in preparation for a return to the community. At the present time, out of 190 employees we have 90 who are ex-patients, and they are doing all sorts of work, from the most menial work we have up through the line in the engine room, the firing room, on the farm, in the office, and on the medical staff. There is hardly any job that a consumptive cannot carry out after some fashion or other.

I try to get over to my patients when they go out that it is how they live and not where they live, and that nine times out of ten it is not the job that breaks them down, the three, five, six or eight hours a day they work but it is the other sixteen hours which they have to themselves. If we feel that a patient is able to do full-time work after he has had a chance to try himself out in the sanatorium, we tell him, "You can go out and do six hours or eight hours, but the rest of the time you must take sanatorium treatment."

Therefore, in order to get the man back on the job, early diagnosis, early sanatorium treatment and education are necessary.

CHAIRMAN HAWES: Dr. Emerson has been one of the first sanatorium men whom I have ever heard admit the truth by saying that the patient's staying at the sanatorium is but an incident, that the treatment comes before or after he is in the sanatorium. He is perfectly frank and perfectly open.

Dr. Irving Clark of the Norton Company, Worcester, can speak with long experience on this subject.

DR. W. IRVING CLARK, Worcester: *Mr. Chairman, Ladies and Gentlemen of the Section*—I am representing the same thing that Dr. Quinby does, that is, the man in industry who is trying to get the tubercular case back on the job. We have this matter pretty well standardized in industrial medicine. We all carry out about the same procedure, which has been so splendidly outlined by Dr. Quinby. We all have the same difficulties, and I was very much interested in hearing Dr. Crane carry the division of his cases into three different classes.

As a matter of fact, the whole question of tuberculosis was summed up many years ago (I think twenty-five years ago) by my old instructor, the late Dr. Hollis of New York, when he said that in his experience tubercular cases fell into three classes—those who got well anyhow; those who got well under the best possible conditions, and those who never got well no matter what you did for them. It seems to me that that classification still holds good, and I think it is very interesting that the man who has had the sanatorium treatment comes out somewhat in the same way. There are those who have had tuberculosis and who come back to work and who are able to carry on without any trouble at all, and they are perhaps approximately almost a third. Then there are those who, when they come back to work, work for a certain period and then break down, and then after further treatment come back again to work. Those are perhaps a third, although I do not think the number is quite as large as that. Then there are those who come back to work and break down and are never able to resume their original occupation.

The one thing which has not been brought out, and which I think is of tremendous importance, is the individual idiosyncrasy towards tu-

berculosis. We have a great many men who go out with apparently the same condition and who come back, some of whom are able to continue work, and some of whom are not able to continue work. There does not seem to be any difference in the pathology. It seems to be an individual idiosyncrasy—some are able to return, and some are not.

It was rather interesting to me to find that in our factory where there is a very serious industrial hazard from the inhalation of dust, that by x-ray several cases were discovered in which there were signs of tuberculosis in the lungs. These plates were all read at Saranac, so I think probably the diagnosis is correct. I went over the chests of each one of these men, carefully, after getting this report, and could find no signs whatever of active tuberculosis, nor had they any clinical symptoms. Here are men who some time in their lives have had tuberculosis and who had worked for many years under the worst working conditions for a person with lung trouble that you could think of, breathing quantities of abrasive, cutting dust, without stirring up the disease. It shows how people can have tuberculosis and can get back to work and can continue work without further trouble.

Chairman Hawes: Finally, I am going to ask a man to speak who, like myself, has been in the rough and tumble of this business in the large cities, Dr. N. K. Wood of Boston, who has been engaged in this problem for a good many years.

Dr. N. K. Wood, Boston: *Mr. Chairman and Gentlemen*—I am sure the entire section has been very much interested in the papers that we have heard, and in the professional recognition of such a very important part of the treatment of tuberculosis, a part which is steadily being recognized more and more. I think that we can adopt the slogan "that the normal man likes work." The desire to work, whether it be man or woman, is the normal physical reaction of the mind or body, or both mind and body.

The treatment of tuberculosis which goes only far enough to make a person an economic liability and is not continued long enough to make that person an economic asset, has failed in a very important factor. Today we do not consider that our treatment of tuberculosis has been effective, unless we are able to demonstrate, that that person can return to a job and keep it over a period of years.

In discussing these papers it is hard to separate them, because all three of them touch on important phases of the same problem.

Mr. Hochhauser brought out the fact that in many cases working conditions are not favorable for the working individual. Shops are not run in a hygienic manner. They are run to make money and not to make comfort and happiness. All three speakers brought out these facts.

It has always been true that private organizations have, as an important function the duty to blaze the trail for advance in treatment. If any new treatment in a private institution proves to be beneficial, that successful advance in treatment must be adopted by public institutions. I think a very important help to the tuberculous individual can be brought about by these gentlemen endeavoring to make factories more and more hygienic for their workmen. What a simple thing it is to provide dry clothing on rainy days for workmen. It is a very simple thing, but how important it is. A man should not work even a few hours with wet feet, simply because he happened to leave his home without rubbers.

Mr. Hochhauser said that those who go back and find their own job do better. Of course that means that the higher intelligence of the individual, the more chance he has for success, because he learns how to make his mind take care of a weakened physical body.

In such places as the New England Sanatorium with its workshops, an effort is made to have a group of cultivated minds supply that lack of cultivation on the part of a great many workers and protect their bodies by our better knowledge of the condition under which they should work.

I should like to ask if the question of the part-time worker could be solved by having a series of workmen so that, for instance, one may work from eight until eleven, another from eleven to three, and another from three to six. In that way the plant could have one full-time worker and their work not be interfered with as it would be by having somebody come and work for the morning, or come in the afternoon, or however it is arranged. It might give a solution which would give the factory a full-time worker but each individual a part-time job.

Certainly exercise is a very, very important and very necessary part of the treatment of tuberculosis. I should like to express my private opinion from my own private work: I don't believe any man who is running a sanatorium would say that any general practitioner could leave his practice, enter that sanatorium and run it well. I don't believe any superintendent of a sanatorium would admit that statement as true. You cannot make me believe any more readily that the general practitioner can take a tuberculous individual after graduating from a sanatorium and judiciously conduct his after-treatment. I do not believe it would be any easier for him to do that than it would be for him to step into a sanatorium and run it satisfactorily.

Some of you know that I have run a class now for twenty-two years. I sometimes wonder if the class treatment may not come into its own and the people who run a class be the ones taken out of the group of general practitioners to take care of patients in their home and continue this work. I would like to state this regarding the patients that I have had under my own care: I never feel that I can drop a patient until either

I have kept him working five years or have been to his funeral. Before I let the patients go back to work, moreover, my rule is that they should be able to be up, out of bed, at least ten hours a day, that they shall be able to walk four hours a day for a distance of ten miles, and do that for at least two or three months. Then when they go back to work, I ask them to agree to stay in bed twelve hours out of the twenty-four. The writers of these papers have brought out the fact that it is oftentimes not what the man does when he goes back to work in his working hours but what he does with his leisure time, that is the real cause of a further breakdown.

(Applause).

CHAIRMAN HAWES: Dr. Wood is an enthusiast with very definitely fixed ideas about certain things. I could not help smiling a little when he said that the fact a man breaks down in his work has proved that the conditions of that work are necessarily bad. There are a good many bank presidents who perhaps come under that category, but be that as it may, Dr. Wood knows what he is talking about.

Now the subject is open for general discussion. I see the faces of many here who could contribute if they cared to. I should be delighted if some one of them would care to take part.

DR. QUINBY: I object to Dr. Wood's implication that our working conditions encourage tuberculosis. In the first place according to United States Public Health Service, which has investigated and tabulated our disability records for seven years, we have a better health and tuberculosis record than any other comparable group. In the second place our work environment, in which the employee spends only about one-fourth of his time, is far healthier than conditions to which he is exposed during the remainder of his time. In the third place, excepting for a few notable exceptions, the work environment is not responsible for tuberculosis and in the fourth place I am not aware that Dr. Wood has ever visited our plant in order to see first hand just what our conditions are. I should be glad to extend an invitation to him to do so.

CHAIRMAN HAWES: I might say I know the working conditions of the Hood Rubber Company and have visited the homes of many of the employees, and know there is a contrast.

Has anyone any other remarks to make on this subject? I will ask Mr. Hochhauser if he has anything further to say.

MR. HOCHHAUSER: Dr. Wood raised the question as to whether it was possible for two people to use the same sewing machine. We considered this, for if it was feasible and desirable we could employ considerably more people with the same number of machines, but we found it neither desirable nor profitable. As we know, the most serious problem is that of creating a desire to work and overcoming the ever-present fear of a relapse. It might be possible so to arrange the time of a four hour a day worker so that he would work two hours mornings and two hours afternoons and a second patient work the other two hours of the morning and two hours of the afternoon, but if one of these patients should reach five hours a day and the machine was not available for him, you would lose a lot that you had gained in morale. That is why even though a patient works but two to three hours a day, he has his own machine.

The point has also been made that we are concerned with the particular job and not the kind of work in which the patient is to engage. We had a very interesting experience a number of years ago with a patient who secured a job as watchman for the Interborough Street Railway Company. It was a night watchman's job, he found it very attractive both with regard to pay and the fact that it was outdoors without any heavy work. He found that he had to make the rounds of the yard (about two miles) once an hour, for ten hours, each night so that he was walking almost twenty miles every working day.

I think there is a real difference in point of view between ourselves and Dr. Varrier Jones. He emphasizes the need of continuous sheltered employment. We believe there are a large number who after two to three years of graduated work, or as we call it, industrial convalescence, may perform from 75% to 100% of their normal working capacity.

The following officers were elected to serve for the ensuing year in the Section of Tuberculosis:

Chairman: Dr. John B. Hawes, Boston.

Secretary: Dr. Walter A. Griffin, Sharon.

CHAIRMAN HAWES: If there is nothing further, I declare the meeting adjourned. The meeting adjourned at four forty-five o'clock.

THE RELATIVE POSITION OF DIABETES AS A CAUSE OF DEATH

Massachusetts 1902-1927

BY ANGELINE D. HAMBLEN* AND ELLIOTT P. JOSLIN, M.D.*

IN 1902 there were 47,491 deaths in Massachusetts. When these were listed according to the International Classification of Causes of Death, and arranged in the order of their frequency, number 1 being the cause found most often, diabetes ranked number 21. In 1927 there were 49,334 deaths and diabetes ranked number 11. The reason for this change in position is due to three factors:

1. Increase in number of deaths from diabetes.
2. Decrease in number of deaths from other causes.
3. Changing classification of causes of death.

According to the registration reports 379 died from diabetes in 1902 and 844 in 1927. This was an increase from .8 per cent. of all deaths to 1.7 per cent. of all deaths or an increase of .9 per cent. ± .07 which is statistically significant.

Diarrhea and enteritis, tuberculosis (forms other than pulmonary), diphtheria, and typhoid, all ranked ahead of diabetes in 1902, but by 1927 they had dropped below. The rates for these diseases have been decreasing throughout the period.

The rather indefinite terms meningitis, paralysis, peritonitis, and old age, all of which ranked ahead of diabetes in number in 1902, are now disappearing from the lists of causes of death. In 1902 they totaled 4913. In 1927 they totaled 490. Perhaps some of those in the total for 1902 would have been listed as diabetes in 1927. It may be interesting to speculate what the number of these may have been. If we assume that the number of deaths from diabetes bore the same ratio to the number of deaths from "indefinite" causes as it did to the number of deaths from "definite" causes, then 429 was the total for diabetes in 1902. Even based on this number, the increase would have been .8 per cent. ± .07.

There has been a great increase in the number of deaths from diabetes, and although unfortunately changing classification of causes of death makes it impossible to determine exactly how much of this increase is a real increase in the number of deaths due to the disease, even a very conservative estimate shows that diabetes is given as a cause of death almost twice as frequently now as it was 25 years ago. Last year one death in 58 was due to diabetes.

*For record and address of author see "This Week's Issue," page 952.

RELATIVE POSITION OF DIABETES AS A CAUSE OF DEATH

1902

		No. of deaths	% of deaths from all causes
1	Tuberculosis pulmonary	4685	9.9
2	Pneumonia	4583	9.7
3	Organic heart	4583	9.7
4	Congenital debility malformations, etc.	2996	6.3
5	Diarrhea and enteritis (under 2)	2629	5.5
6	Cerebral congestion, hemorrhage, softening	2494	5.3
7	Nephritis, Bright's disease	2341	4.9
8	Cancer	2141	4.5
9	External causes other than suicide	1853	3.9
10	Tuberculosis (other forms)	1685	3.5
11	Old age	1598	3.4
12	Bronchitis	1390	2.9
13	Meningitis	1203	2.5
14	Paralysis	1072	2.3
15	Diphtheria	873	1.8
16	Convulsions of children	601	1.3
17	Typhoid fever	538	1.1
18	Diarrhea and enteritis (over 2)	528	1.1
19	Other affections of the stomach	517	1.1
20	Peritonitis	439	.9
21	Diabetes	379	.8
	All other causes	8363	17.6
	Total All Causes	47,491	100.0

RELATIVE POSITION OF DIABETES AS A CAUSE OF DEATH

1910

		No. of deaths	% of deaths from all causes
1	Pneumonia	6677	12.3
2	Organic heart	5781	10.6
3	Tuberculosis pulmonary	4503	8.3
4	Diarrhea and enteritis (under 2)	3744	6.9
5	Congenital debility, malformations	3692	6.8
6	Cerebral congestion, hemorrhage, softening	3318	6.1
7	Nephritis, Bright's disease	3061	5.6
8	Cancer	3028	5.6
9	External causes other than suicide	2387	4.4
10	Tuberculosis (other forms)	1551	2.9
11	Disease of arteries	1411	2.6
12	Bronchitis	1208	2.2
13	Old age	728	1.3
14	Other affections of the stomach	726	1.3
15	Diphtheria	679	1.2
16	Meningitis	635	1.2
17	Diarrhea and enteritis (over 2)	609	1.1
18	Diabetes	575	1.1
	All other causes	10,094	18.5
	Total All Causes	54,407	100.0

RELATIVE POSITION OF DIABETES AS A CAUSE OF DEATH

1920

		No. of deaths	% of deaths from all causes
1	Organic heart	6975	13.0
2	Pneumonia	6347	11.8
3	Cancer	4494	8.4
4	Cerebral congestion, hemorrhage, softening	4187	7.8
5	Tuberculosis pulmonary	3750	7.0
6	Nephritis, Bright's disease	3644	6.8
7	Congenital debility, malformations	2784	5.2
8	External causes other than suicide	2547	4.8
9	Disease of arteries	1702	3.2
10	Diarrhea and enteritis (under 2)	1667	3.1
11	Influenza	1623	3.0
12	Other diseases peculiar to early infancy	930	1.7
13	Diabetes	796	1.5
	All other causes	12,186	22.7
	Total All Causes	53,632	100.0

RELATIVE POSITION OF DIABETES AS A CAUSE OF DEATH

1925

		No. of deaths	% of deaths from all causes
1	Organic heart	8952	17.3
2	Pneumonia	5244	10.1
3	Cancer	5196	10.0
4	Cerebral hemorrhage, softening	4911	9.5
5	Nephritis, Bright's disease	3153	6.1
6	External causes other than suicide	3114	6.0
7	Tuberculosis pulmonary	2883	5.5
8	Congenital debility, malformations	2470	4.8
9	Disease of arteries	1874	3.6
10	Angina pectoris	820	1.6
11	Diabetes	806	1.5
	All other causes	12,467	24.0
	Total All Causes	51,890	100.0

RELATIVE POSITION OF DIABETES AS A CAUSE OF DEATH

1927

		No. of deaths	% of deaths from all causes
1	Organic heart	9473	19.2
2	Cancer	5454	11.1
3	Pneumonia	4088	8.3
4	Cerebral hemorrhage, softening	3999	8.1
5	Nephritis, Bright's disease	3763	7.6
6	External causes other than suicide	2905	5.9
7	Tuberculosis pulmonary	2774	5.6
8	Congenital debility, malformations	2305	4.7
9	Disease of arteries	1746	3.5
10	Angina pectoris	859	1.7
11	Diabetes	844	1.7
	All other causes	11,114	22.6
	Total All Causes	49,324	100.0

HEIGHT, WEIGHT AND INTELLIGENCE RELATIONSHIPS IN 3553 RETARDED SCHOOL CHILDREN*

BY NEIL A. DAYTON, M.D.†

IN 1921, a system for the psychiatric examination of retarded children throughout the public schools of Massachusetts became operative. The plan[1] evolved by the late Dr. Walter E. Fernald, Dr. George M. Kline, Commissioner of Mental Diseases and Dr. Payson Smith, Commissioner of Education, created a system of travelling clinics operating from fourteen mental hospitals and schools for mental defectives.

The analysis presented considers 3553 examinations which were conducted by the travelling clinics of the W. E. Fernald and Wrentham State Schools.‡ Approximately 72% were diagnosed as "feeble-minded". The physical examination, which is one of the fields covered by the Fernald "Ten-point-scale" examination, gives us valuable information in reference to the height and weight of the retarded child.

HEIGHT AND WEIGHT

A modified table for norms based on a combination of tables referring to age and weight, and age and height was prepared by Dr. Fernald in 1920[2]. By this means a constant comparison was made, age for age, between the retarded children examined and averages in the general child population.*

Graph I gives the percentages falling in the various groupings of height and weight. These

*Read before the New England Society of Psychiatry at Howard, R. I., on April 3, 1928.

Massachusetts Department of Mental Diseases, Statistical Research Project I, Article No. 2.

The writer was aided in the preparation of this paper by Helen H. Dolan, B.S., and Eleanor Grenfell, A.B., Assistants in Research.

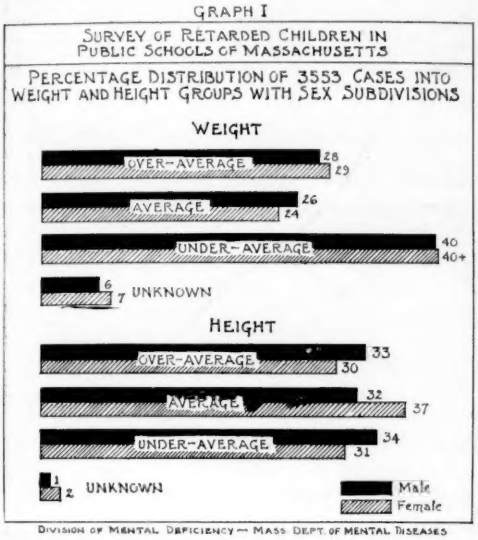
†For record and address of author see "This Week's Issue," page 952.

‡These examinations were made in 1921, 1922 and 1923 by Dr. Esther S. B. Woodward and Dr. Alice M. Patterson of the W. E. Fernald and Wrentham State Schools. Dr. Ransom A. Greene and Dr. George L. Wallace generously granted permission to use the material of these examinations from their school clinic records. Their suggestions and also those of Dr. Henry B. Elkind have contributed materially to this survey.

*An early test study indicated that the bulk of children examined would fall between the chronologic ages of eight and twelve years. In coding the weight groups, the individual weights more than five pounds over the norm constitute the group over-average-weight. Weights more than five pounds under the norm make up the group under-average-weight. The average group lies between these limits. The heights more than one inch over the norm constitute the group over-average-height. Heights more than one inch under the norm make up the group under-average-height. The average group lies between these limits.

figures have been divided into sexes and show little significant variation. As the sex differences in intelligence were small also, the sexes are combined in the remaining graphs. Working from a comparison with national averages in the general child population, we find that more retarded children are under-average in weight than over-average. In height there is less significant difference. An important point is the manner of the distribution of these three

GRAPH I


SURVEY OF RETARDED CHILDREN IN PUBLIC SCHOOLS OF MASSACHUSETTS
PERCENTAGE DISTRIBUTION OF 3553 CASES INTO WEIGHT AND HEIGHT GROUPS WITH SEX SUBDIVISIONS
WEIGHT
OVER-AVERAGE 28 29
AVERAGE 26 24
UNDER-AVERAGE 40 40+
6 7 UNKNOWN
HEIGHT
OVER-AVERAGE 33 30
AVERAGE 32 37
UNDER-AVERAGE 34 31
1 2 UNKNOWN
Male
Female
DIVISION OF MENTAL DEFICIENCY — MASS. DEPT. OF MENTAL DISEASES

groups. In normal curves of either weight or height, we should expect that the average groups would contain far more cases than either the over-average-groups or the under-average groups. We see in this graph that the average groups do not more than equal the over-average and under-average groups. It would suggest that this group of retarded children tends to deviate from the mean in both height and weight beyond the usual expectation.

When we have an atypical curve (as in height) or bi-modal distribution (as in weight), it is well to scrutinize our data for causal relationships. It is clear that too narrow limits of the average groups would make for small numbers in these classifications. This apparently is demonstrated in the present material, yet the limits of both average groups are not too narrow.†

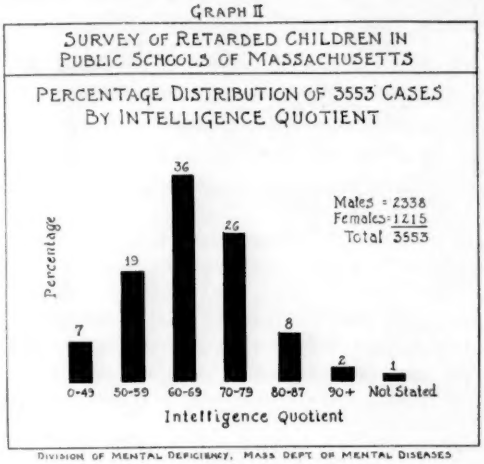
The next influence to be considered is that of mixed classification. We have several possibilities here. Chronologic and mental age or their index, the intelligence quotient, environment or abnormal physical states, etc., may be important factors in association with height and weight. All of these must be considered, but obviously such a full discussion is impracticable for any one communication. Consequently, this paper will deal only with the association between height, weight and intelligence as measured by tests.

†The limits of five pounds over or under the normal constituted nearly eight per cent. of the average of sixty-five pounds for the chronologic age of ten years. This limit extends both ways, that is, the child may be eight per cent. over, or eight per cent. under average before leaving the average group. There is a leeway of sixteen per cent., or ten pounds. This can not be considered as other than an average weight group with liberal limits. In the consideration of height, a limit of one inch over the average or under the average is roughly two per cent. of the height of fifty-one inches for the age of ten years. This extends both ways, in that the child may be two per cent. over or two per cent. under average height, before leaving the average group, a leeway of four per cent., or two inches. As the arbitrary limits of this study are unsuited to the many children under eight and over twelve a percentage estimate for averages has been substituted.

INTELLIGENCE QUOTIENTS

The Stanford Revision of the Binet-Simon Tests is used by the clinic psychologists for the determination of the mental age. Mental age divided by the chronologic age gives the intelligence quotient or the percentage of average intelligence possessed by the individual. The validity of measuring "intelligence" by use of present-day methods will not be questioned at this time. We can say that the test used presents a rough estimate sufficiently accurate for the present purposes.

GRAPH II



Graph II shows the distribution of the 3553 retarded children into intelligence groupings. The possible chance variations in the small numbers constituting the groups 0—.49, .80—.89, and .90 + must be considered in judging the results. In general, we may say that our findings in the three groups .50—.59, .60—.69 and .70—.79 will present adequate numbers and will be the most reliable.

INTELLIGENCE VARIATIONS IN HEIGHT GROUPS

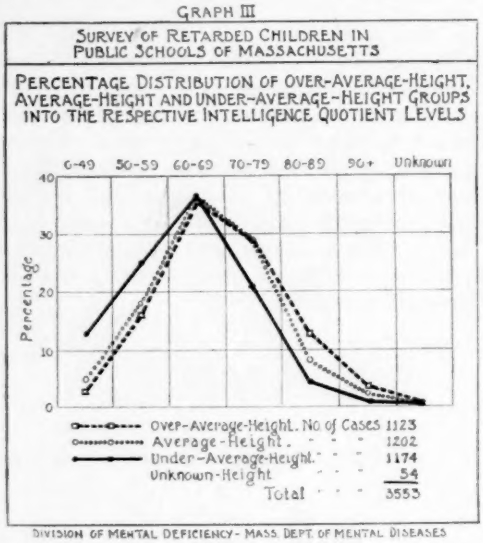
As presented in Graph I, the over-average height, average-height, and under-average-height groups were studied separately and curves were plotted for the percentage of each height group falling in the various intelligence levels. Graph III reveals that the retarded school children who are over-average in height appear more frequently in the higher intelligence groups and less frequently in the lower intelligence groups. Children under-average in height appear relatively less frequently in the higher intelligence groups and more frequently in the groups of lower intelligence. The mean intelligence quotients of the three height groups are as follows:

over-average, 68.5 ± .34 (S. D.); average, 66.3 ± .34 (S. D.); under average 61.5 ± .34 (S. D.).

INTELLIGENCE VARIATIONS IN WEIGHT GROUPS

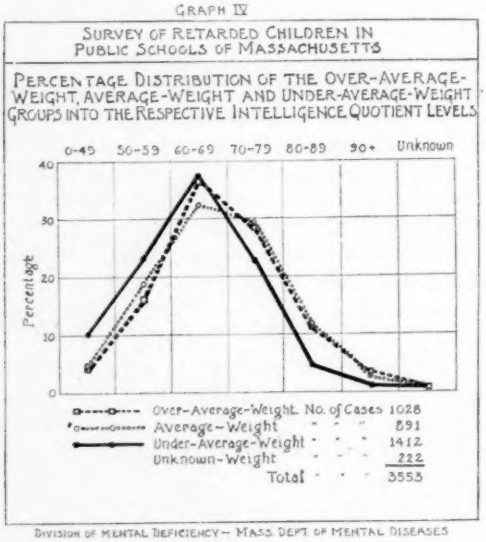
In a similar manner the three groups under-average-weight, average-weight, and over-average-weight were studied for intelligence divi-

GRAPH III


SURVEY OF RETARDED CHILDREN IN PUBLIC SCHOOLS OF MASSACHUSETTS
PERCENTAGE DISTRIBUTION OF OVER-AVERAGE-HEIGHT, AVERAGE-HEIGHT AND UNDER-AVERAGE-HEIGHT GROUPS INTO THE RESPECTIVE INTELLIGENCE QUOTIENT LEVELS
0-49 50-59 60-69 70-79 80-89 90+ Unknown
Percentage
Over-Average-Height. No. of Cases 1123
Average-Height. 1202
Under-Average-Height. 1174
Unknown-Height 54
Total 3553
DIVISION OF MENTAL DEFICIENCY - MASS. DEPT. OF MENTAL DISEASES

sions. Graph IV shows that the retarded children who are over-average in weight appear more frequently in the higher intelligence groups, and less frequently in the lower intelligence groups. Those who are under-average in weight appear relatively less frequently in the higher intelligence groups and more frequently

GRAPH IV


SURVEY OF RETARDED CHILDREN IN PUBLIC SCHOOLS OF MASSACHUSETTS
PERCENTAGE DISTRIBUTION OF THE OVER-AVERAGE-WEIGHT, AVERAGE-WEIGHT AND UNDER-AVERAGE-WEIGHT GROUPS INTO THE RESPECTIVE INTELLIGENCE QUOTIENT LEVELS
0-49 50-59 60-69 70-79 80-89 90+ Unknown
Percentage
Over-Average-Weight. No. of Cases 1028
Average-Weight 891
Under-Average-Weight 1412
Unknown-Weight 222
Total 3553
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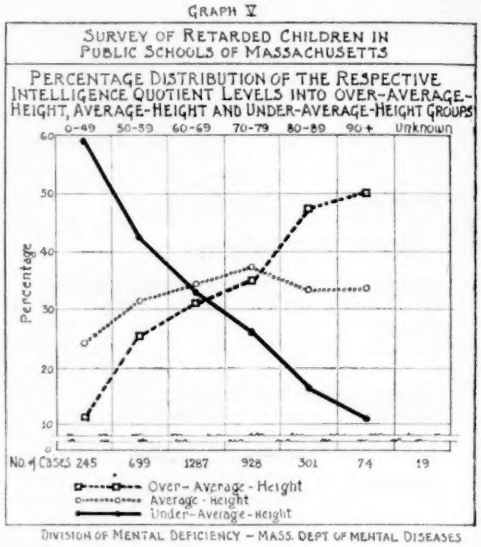
in the lower intelligence groups. It will be observed that the curves of the average and over-average groups show similar tendencies. This suggests that the cases under-weight are the ones deviating most markedly from the general trend of the entire group. The mean intelligence quotients of the three weight groups are as follows: over-average, 68.4 ± .37 (S. D.); average, 67.1 ± .41 (S. D.); under-average, 62.8 ± .33. (S. D.).

HEIGHT VARIATIONS IN INTELLIGENCE LEVELS

Up to this point we have approached through weight and height groups to intelligence. To

GRAPH V


SURVEY OF RETARDED CHILDREN IN PUBLIC SCHOOLS OF MASSACHUSETTS
PERCENTAGE DISTRIBUTION OF THE RESPECTIVE INTELLIGENCE QUOTIENT LEVELS INTO OVER-AVERAGE-HEIGHT, AVERAGE-HEIGHT AND UNDER-AVERAGE-HEIGHT GROUPS
0-49 50-59 60-69 70-79 80-89 90+ Unknown
Percentage
No. of Cases 245 699 1287 928 301 74 19
Over-Average-Height
Average-Height
Under-Average-Height
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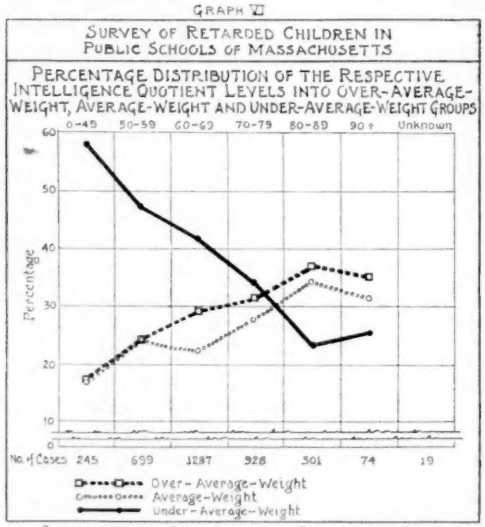
have the complete picture of the situation we must work contra-wise and proceed from intelligence to weight and height. We must study the various intelligence levels separately for the percentage of over-average, average and under-average height cases occurring in each level.

GRAPH VI


SURVEY OF RETARDED CHILDREN IN PUBLIC SCHOOLS OF MASSACHUSETTS
PERCENTAGE DISTRIBUTION OF THE RESPECTIVE INTELLIGENCE QUOTIENT LEVELS INTO OVER-AVERAGE-WEIGHT, AVERAGE-WEIGHT AND UNDER-AVERAGE-WEIGHT GROUPS
0-49 50-59 60-69 70-79 80-89 90+ Unknown
Percentage
No. of Cases 245 699 1287 928 301 74 19
Over-Average-Weight
Average-Weight
Under-Average-Weight
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The number of cases concerned in plotting each I. Q. level is recorded in Graph V. We wish to know if these levels of intelligence have variations in weight and height peculiar to any particular level. In Graph V we see that the higher levels of intelligence have uniformly more children who are over-average in height and fewer

under-average in height. Again, we observe that the over-average and average-height curves have the same trend.

WEIGHT VARIATIONS IN INTELLIGENCE LEVELS

In studying the intelligence levels for weight groups a method similar to that applied in Graph V was used. It will be observed that the same tendency prevails in both graphs. In Graph VI the higher mental levels have more cases which are over-average and fewer under-average in weight. The lower intelligence quotients have more cases under-average and fewer over-average in weight.

COMBINATIONS OF HEIGHT AND WEIGHT GROUPS

There still remains another point for consideration. It is obvious that there may be various combinations between the height and weight variations. That is, a child may be both underweight and under-height or vice versa. Table A shows us that children who are under-average in weight also tend markedly to be under-average in height. This demonstrates that over 67% of children over-average in weight were also over-average in height, and that 65% of those under-average in weight were also under-average in height. It is obvious that these combinations will present children even lower in intelligence than those presenting a single weight or height defect.

TABLE A

DISTRIBUTION OF OVER-AVERAGE-WEIGHT, AVERAGE-WEIGHT AND UNDER-AVERAGE-WEIGHT GROUPS INTO THE OVER-AVERAGE-HEIGHT, AVERAGE HEIGHT AND UNDER-AVERAGE-HEIGHT GROUPS

	Over-Average-Height	Average-Height	Under-Average-Height	Unknown	Totals
Over-Average-Weight	692	253	82	1	1028
Average-Weight	223	548	119	1	891
Under-Average-Weight	162	326	922	2	1412
Unknown	46	75	51	50	222
Totals	1123	1202	1174	54	3553

DISCUSSION

From the foregoing it appears that the gross results (as shown in Graph I) in reference to height and weight of any group of mentally deficient may be due to the loading of particular intelligence levels. If the group being examined had most of its cases in the lower intelligence quotients, the entire group would tend to be under-average-height (Graph V) and under-average-weight (Graph VI). This apparently has been the factor in the decision so often quoted, that the feebleminded are under-weight and under-height[3]. These opinions have been based on studies of institution populations which consist largely of cases of lower mental rating. Thus it was true that the *feeble-minded studied by Wylie* were under-weight and under-height.

There is another important fact brought out. Why should a large portion of the children with intelligence quotients between .70 and .90 be over-average in height and weight, in comparison with other school children presumably of average intelligence? If they merged gradually from under-average in the lower intelligence quotients to average in the higher, we could quite understand a correlation between under-height, under-weight and low intelligence. But there is a more complex association in the fact that many cases of "borderline" and "dull" intelligence are taller and heavier than normal children of the same age. When a similar effect was observed in moron girls by Goddard, the explanation was given[4] that the children studied were institution inmates, who were well fed, leading quiet lives without stress or strain, and it was thought natural that they should grow a little larger. However, our sample is made up of school children, over a third of whom come from poor environments, without the protection of the institution. Yet the results are similar.

The fact that the over-average and under-average lines in graphs V and VI cross at an intelligence of approximately 70 suggests to us that we are dealing with two different universes, one made up of the feebleminded and the other of children not feebleminded. It may be that we are simply observing the adjoining of those separate universes. The apparent division into two universes gives us a new thought. For a long time we have been told that the upper mental limit of feeblemindedness should be placed at an intelligence quotient of approximately .70. The opinion that the division should come at this point has been based on intellectual and social criteria. Physiologic criteria as represented by both height and weight show that, on the average, the disappearance of height and weight deficiencies in the mentally deficient will tend to occur at an intelligence quotient of approximately .70. This cannot be demonstrated in every case but in the long run will be true. We have then, the significant point of the physiologic support of an opinion which previously has been based on criteria essentially mental.

The significance of these results from the statistical viewpoint remains to be determined. Have these findings resulted merely by chance? Or is there an important suggestion in the

thought that retarded children under-average in height and weight are of lower mental ratings? We can readily determine whether or not our averages, or the mean intelligence quotients, could have happened by accident. The mean intelligence quotient of the over-average height group (N = 1123) is 68.5 ± .34 (S. D.). The mean intelligence quotient of the under-average height group (N = 1174) is 61.5 ± .34 (S. D.). Taking the formula

$$\sigma_{d} = \sqrt{(\sigma_1)^2 - (\sigma_2)^2}$$

we find that the difference is 7.0 ± .48 (S. D.).

In considering weight the mean intelligence quotient of the over-average group (N = 1028) is 68.4 ± .37 (S. D.) while that of the under-average group (N = 1412) is 62.8 ± .33 (S. D.). Using the formula as before, we have in weight a difference of 5.6 ± .48 (S. D.). A difference of about five times the standard deviation would indicate that the result would happen by chance about once in a million times when based on probability. These differences are eleven and fourteen times the respective standard deviations. When we consult the pessimistic criterion of Tchebycheff, our findings can be explained by chance but once in 196 trials in height, and once in 121 trials in weight.

We cannot hope to go to the extreme of using these physical criteria for diagnostic or prognostic purposes. That is, of two mentally deficient children coming before us, we cannot say that that one under-average in height or weight will be of lower intelligence than the other. This is so because of the tremendous dispersion in the intelligence quotients in both groups. However, we can say that in the long run and in numbers of any size, the findings enumerated will be true. We can be fairly sure of our prognosis if dealing with the feebleminded, but if the group was normal we could have no expectation that the criteria would apply.

Our present knowledge does not tell us the significance of variations in height and weight in relation to mental defect. We must study further to determine whether or not these variations precede, follow, or merely accompany mental deficiency. For the present we see that there is a strong association between these factors.

SUMMARY

It is understood that the results recorded apply only to the sample of 3553 cases presented (72% "feebleminded") and suggest no conclusions in reference to the universe of retarded school children.

I. These retarded school children, as a whole, are slightly under-average in weight as compared with the general child population. In stature they present less significant variations. (Graph I.)

II. If we have a sample with average characteristics these retarded school children show an apparent tendency to deviate from the mean to a greater extent than is expected in both weight and height.

III. There is an apparent relationship between (1) height and intelligence and (2) weight and intelligence. The over-average-height and over-average-weight groups have relatively more cases in the higher intelligence levels than the under-average-height and under-average-weight groups. (Graphs III and IV.)

IV. When the approach is reversed and we proceed from (1) intelligence to height and (2), intelligence to weight, we find the following:

(a) In the upper mental levels there are more children over-average in height (Graph V), and over-average in weight (Graph VI).

(b) In the lower levels of intelligence there are more children under-average in height (Graph V), and under-average in weight (Graph VI).

V. The over-average-height group has a mean intelligence quotient definitely above the mean of the under-average-height group. The difference is 7.0 ± .48 (S. D.).

The mean intelligence quotient of the over-average-height group is definitely above that of the under-average-height group. The difference is 5.6 ± .48 (S. D.).

VI. We must study height and weight variations further to determine whether or not they precede, follow, or merely accompany mental deficiency. In this sample, degree of physical deficiency is closely associated with degree of mental deficiency.

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DIPHTHERIA DEATHS IN MASSACHUSETTS, 1927

Third Chronological Report*

BY EDWARD A. LANE, M.D.†

DURING 1927 there were 4750 cases and 268 deaths reported in Massachusetts as due to diphtheria. The case fatality rate of 5.6 per cent., approximately one death to every 18 cases, is the lowest on record in the State. The mortality rate, 6.3 per 100,000, is the second lowest on record.

TABLE I

DIPHTHERIA—MASSACHUSETTS

Year	Cases	Case Rate Per 100,000	Deaths	Death Rate Per 100,000	Fatality Rate Per Cent.
1918-22 (av.)	8058	206.9	601	15.5	7.5
1923	9018	222.8	579	14.3	6.4
1924	7290	177.7	534	13.0	7.3
1925	4482	107.8	333	8.0	7.4
1926	3401	80.7	249	5.9	7.3
1927	4750	111.3	268	6.3	5.6

The present study is based upon a personal investigation by the State District Health Officers of an unselected sample of 117 of the 226 diphtheria deaths occurring during the year exclusive of the forty Boston resident deaths and two deaths of individuals from outside the State. Unfortunately, none of the forty-seven deaths occurring in the First or Southeastern District could be included as no data had been received up to the time of making the tabulations. Of the 355 cities and towns in the State, diphtheria deaths were reported as occurring in residents of sixty-two, of which one or more deaths were investigated in thirty-two.

The percentage of deaths under five is somewhat smaller than the approximate two-thirds ordinarily expected.

TABLE III

ECONOMIC CONDITION OF FAMILY

Status	1927 Number	1927 Per Cent.	1926 Per Cent.
Good	27	24	12.5
Fair	47	43	19.5
Poor	36	33	68.0
Total	110	100	100.0
Unknown	7		

There is a decided difference in the distribution as compared with the figures for the previous year. If any significance can be attached to these figures based upon the opinion of a different investigator in each district, but the same in each with one exception for both years, there would seem to be less excuse for the 1927 fatalities than for the larger rate of the previous year.

TABLE II

SEX AND AGE DISTRIBUTION

Age	Sex: Male	Female	Unknown	Total	Per Cent. Distribution: 117 Invest.	Deaths	226 Reported	Deaths*
Under 1 yr.	2	2	0	4	3.4		3.5	
1	2	7	0	9	7.7		8.4	
2	9	7	0	16	13.7	47.8	15.9	49.8
3	6	8	0	14	11.9		10.1	
4	5	8	0	13	11.1		11.9	
5	5	4	1	10	8.5		8.4	
6	6	4	0	10	8.5		8.8	
7	5	7	0	12	10.2	34.0	8.0	35.4
8	1	3	0	4	3.4		6.2	
9	2	1	1	4	3.4		4.0	
10-14	3	6	0	9	7.7		7.1	
15-19	1	0	0	1	0.9		1.5	
20-29	1	3	0	4	3.4		2.7	
30-39	2	1	0	3	2.6		1.8	
40-49	0	1	0	1	0.9		0.4	
50-59	0	0	0	0	0.0		0.0	
60-69	0	1	0	1	0.9		0.4	
70-79	1	0	0	1	0.9		0.9	
Age Unknown	1	0	0	1	0.9		0.0	
Total	52	63	2	117	100.0		100.0	
	45%	55%						

*Exclusive of 40 Boston resident deaths and two out-of-State resident deaths.

*State Department of Public Health.

†For record and address of author see "This Week's Issue," page 952.

TABLE IV

SOURCE OF INFECTION

	Number	Per Cent.
Known[1]	9	8
Suspected[2]	24	22
Unknown	76	70
Total	109	100
No Information	8	

[1] Known sources of infection include definitely established family contacts, in eight instances with a previous case, and in one instance with a previous nasal case or carrier.

[2] Suspected sources of infection include: previous case(s) in immediate neighborhood (11), in same school (8), in same house but on different floor (1), in same hospital (1), a bedside nurse suspected as a carrier, another child in same family with sore throat and negative culture (2).

This is a further increase in the per cent. of probable sources of infection (30 per cent.) over the figure (19.2 per cent.) found in the 1926 study[1]. In Carey's study of 1000 diphtheria deaths published in 1919[2], the source of infection was either unknown or not given in 89.3 per cent.

MEDICAL ATTENTION

A physician was called at some time during the course of the illness in each of the 117 cases investigated. The largest number of cases attended by any one physician was five. Another physician saw four; two, three; and seven, two; the remaining eighty-eight cases all having been seen by different physicians.

In ninety-four instances both the interval between onset and first visit and also the economic status are known.

TABLE V

PERCENTAGE DISTRIBUTION OF CASES BY DATE ON WHICH PHYSICIAN FIRST SAW THE CASE, GROUPED ACCORDING TO ECONOMIC STATUS

Day of Illness	Good (22 cases)	Fair (42 cases)	Poor (30 cases)	Total (94 cases)
Day of Onset	18.2	7.1	13.3	12.1
2	27.2	11.9	10.0	16.1
3	22.7	33.4	6.7	21.2
4	4.6	23.8	20.0	18.2
5	13.6	7.1	13.3	11.1
6	9.1	4.8	20.0	10.1
7	0.0	11.9	0.0	5.1
8	0.0	0.0	16.7	5.1
9	0.0	0.0	0.0	0.0
10	4.6	0.0	0.0	1.0
	100.0	100.0	100.0	100.0

Such evidence of either ignorance or neglect on the part of some parents points the way to a further possible reduction in diphtheria fatality through more widespread and intensive public instruction as to the need for early medical service. It is reasonable, I think, to assume that very few boards and departments of health of even the larger cities and towns have met their full responsibility in this regard.

Although the true date of onset is difficult to ascertain, the figures under the "Good" column above are somewhat disquieting in a tabulation of deaths. With a relatively large number of deaths as compared with the "Poor" group, one is surprised to find 45.4 per cent. of the deaths in the former classification in individuals seen presumably on the day of onset or the day following. The distribution in the "Fair" group approaches more nearly what one would expect to find in all three with increasing numbers of deaths from "Good" to "Poor" if length of interval between onset and first visit were the predominant factor. Presuming that the medical service in the "Good" group was satisfactory, one would have to suppose either an increased virulence of the organism in this group, which appears to be out of the question, or what is more likely, inferior natural resistance in what we know from the Schick test is the less immunized portion of the population. In other words, children in the higher economic group die because of lower natural resistance, while children in the lower economic group die more often from delay in receiving medical attention. This is suggested even more strikingly in the previous study, where the "Fair" group, with 44 per cent. of the deaths seen during the first two days of illness, appears to shade into the "Good" group with 50.5 per cent. of the deaths seen by a physician during the same period. In the "Poor" group but 16 per cent. are said to have had medical attention during a similar interval.

Medical consultation was sought in one-quarter of the ninety-two deaths for which this information is given.

Fifty-seven per cent. of 112 patients were hospitalized. The interval between onset and hospitalization is known in forty instances:

TABLE VI

HOSPITALIZATION

Day of Disease	Hospitalized Cases	Hospitalized Per Cent.
Day of Onset	0	0.0
2	5	12.5
3	4	10.0
4	13	32.5
5	2	5.0
6	7	17.5
7	3	7.5
8	4	10.0
9	1	2.5
16	1	2.5
	40	100.0

CLINICAL DIAGNOSIS

In but six of the 106 cases for which this information is available was the physician said to have failed to make a primary clinical diagnosis of diphtheria. This (5.7 per cent.) is approximately the same percentage of mistaken diagnoses as was found to have occurred in 1926. The

exceptions were: septic sore throat, follicular tonsillitis, Quinsy, "cold", and "doubtful".

TABLE VII

TYPE OF CASE

Type	Number	Per Cent.
Pharyngeal	46	39.6
Laryngeal	33	28.5
Naso-pharyngeal	18	15.5
Pharyngo-laryngeal	12*	10.3
Naso-laryngeal	3	2.6
Naso-pharyngo-laryngeal	3	2.6
Nasal	1	0.9
	116	100.0
Not Stated	1	
Total Deaths Studied	117	

*One of these cases was of the hemorrhagic type.

A girl, age seven years, was seen by a physician the day after onset and the case diagnosed the following day as pharyngeal diphtheria. Three days later, six days after onset, there was a rather profuse vaginal discharge containing the Klebs-Loeffler bacilli.

LABORATORY DIAGNOSIS

With no information in four instances, sixty-four or 57 per cent. of the remaining 113 cases had laboratory examinations. The examination was reported positive in forty-eight or 75 per cent. One fifth of the examinations were made in the State Health Department Laboratory.

ANTITOXIN

Antitoxin was administered in 114 of the 117 cases studied. In two of the exceptions insufficient time was given as the reason for not administering it, while in the third case the patient died before the physician's return.

TABLE VIII

SIZE OF INDIVIDUAL DOSES OF ANTITOXIN

Units	To Patients Given But One Dose	As First of Two or More Doses
1,500	—	1
2,000	1	—
5,000	4	4
6,000	1	1
9,000	—	1
10,000	4	12
14,000	1	—
15,000	8	2
20,000	15	5
25,000	2	2
30,000	6	6
40,000	7	2
50,000	4	4
60,000	4	4
80,000	1	—
95,000	1	—
100,000	3	2
Total	62	46
None given	3	
Amount not stated	6	

The largest individual dose administered was 100,000 units; the smallest, 500 units. The largest total amount given any one case was 200,000 units, the smallest, 2,000 units.

There would appear to be an unduly large variety in the size of individual doses administered. It should be noted that the outstanding modal dose for one administration only is 20,000 and that forty-three of the sixty-two patients given but one dose received 20,000 units or more. Unfortunately data are not available as to the method of administration, which should ordinarily be intramuscularly.

TABLE IX

FREQUENCY OF ADMINISTRATION OF ANTITOXIN

Number of Doses	Number of Cases
Given one dose only	62
Given multiple doses	47*
Two doses	29
Three doses	13
Four doses	2
Unknown	5

*In three cases the number given is not known.

Forty-seven individuals were given multiple doses. The modal dose in this group is 10,000 units. It would appear, therefore, that some physicians are still intentionally giving the total amount in divided doses or else are too cautious.

TABLE X

INTERVAL BETWEEN PHYSICIAN'S FIRST VISIT AND ADMINISTRATION OF FIRST DOSE OF ANTITOXIN

Interval from First Visit	Number	Per Cent.
Same day	70	73.0
1 day later	11	11.5
2 days later	5	5.2
3 days later	6	6.3
4 days later	1	1.0
5 days later	1	1.0
6 days later	0	0.0
7 days later	1	1.0
13 days later	1	1.0
Total Known	96	100.0
None Given	3	
Unknown	18	
Total Cases Studied	117	

As the group being studied represents the more severe cases, it is doubtful whether the administration of but 10,000 units or less as a primary dose, and often subcutaneously administered, is giving the patient the benefit of the doubt. Especially would this be so in the too frequent instances of delay in calling a physician.

TABLE XI

DAY OF DISEASES ON WHICH FIRST DOSE OF ANTITOXIN WAS GIVEN IN THE TWELVE CASES SEEN BY THE PHYSICIAN ON REPORTED DAY OF ONSET

Day of Disease	Patients First Given Antitoxin
Day of Onset	1
2nd	3
3rd	1
4th	4
5th	1
6th	0
7th	0
8th	1
14th	1

The two preceding tabulations indicate that there is still some room for improvement in the quality of medical service with some resulting lowering of the diphtheria fatality rate.

cause of the resulting incompleteness, that so many of the investigations fail to furnish specific information on this point.

Of the two individuals known to have previously been treated with toxin-antitoxin, one was a child, 8 years old, who is said to have received the three injections about five years before. A re-Schick test had never been done. The disease was of the naso-pharyngo-laryngeal type, and the culture was positive. Death occurred thirteen days after onset from vagus paralysis. The other individual, a child seven years old, is said to have been given toxin-antitoxin but one month previously, the number of doses not being stated. The disease was of the naso-pharyngeal type. No laboratory examination was made, the clinical diagnosis being said to have been obvious. Death occurred five days after onset of acute myocarditis.

TABLE XII

INTERVAL BETWEEN ONSET AND DEATH BY TYPE OF DISEASE

Days	Nasal	Pharyngeal	Laryngeal	Naso-Pharyngeal	Pharyngo-Laryngeal	Naso-Laryngeal	Naso-Pharyngo-Laryngeal	Total Number	Total Per Cent.
1	—	1	2	—	—	—	2	5	4.3
2	—	4	5	—	1	—	—	10	8.6
3	—	2	4	—	—	—	—	6	5.2
4	— 0	2 19	6 28	2 8	3 10	1 2	— 2	14 69	12.0 59.3
5	—	2	3	4	3	1	—	13	11.1
6	—	5	3	1	1	—	—	10	8.6
7	—	3	5	1	2	—	—	11	9.5
8-14	1	19	2	7	2	1	1	33	28.4
15-21	—	1	2	1	—	—	—	4	3.5
22-28	—	1	—	—	—	—	—	1	0.9
29-35	—	—	—	—	—	—	—	—	—
36-42	—	1	—	—	—	—	—	1	0.9
43-49	—	1	—	1	—	—	—	2	1.8
Unknown	—	4	1	1	—	—	—	6	5.2
Total	1	46	33	18	12	3	3	116	100.0
						Type of Case Unknown		1	
						Total Cases Studied		117	

IMMUNITY

The Schick test had never been performed on 102 of the 117 individuals included in the study. While information on this point is lacking for the remaining 15, it is reasonably safe to assume that they also were never given this test.

Two individuals had previously been given toxin-antitoxin, ninety-two are known never to have been so treated, while in twenty-three the information is wanting. Here, also, it may reasonably be assumed that none of the last mentioned had ever been given toxin-antitoxin. Ordinarily, any information unfavorable to the employment of toxin-antitoxin does not have to be sought and would have been readily volunteered and noted. It is unfortunate, though, be-

RESPONSIBILITY FOR DIPHTHERIA DEATHS

Fully realizing that such a classification could at best be only a rough approximation, an attempt was made to fix the responsibility for each death investigated on the following grounds:

Interval between onset and physician's first visit.

Fault of	Number of Deaths
Parent	64
Physician	14
Both	12
Undetermined*	27
Total	117

*Insufficient data or apparently no one's fault but a very virulent infection of short duration.

Interval between first visit and administration of antitoxin.

Size and number of doses of antitoxin.

The foregoing tabulation indicates very definitely that delay on the part of the parent in calling a physician constitutes one of the most important factors in the present diphtheria fatality. It is far from gratifying, however, to note that the physician might be considered culpable either solely, or together with the parent, in twenty-six of the 117 cases studied, and possibly in a few more among the twenty-seven deaths for which the fault was undetermined. While of lesser magnitude, it would seem as though this second factor could be more readily overcome. Certainly, it is much less excusable. It is possible, in view of the treatment accorded those cases seen fairly early in the course of the disease, that failure on the part of the parents to call a physician at or near the onset may partially mask almost equally grievous faults on the part of physicians.

It also appears from a study of the individual case investigations, that there is an irreducible minimum of virulent infections, largely of the laryngeal type in which either the onset is so insidious or so abrupt, and the clinical course so rapid that neither the reasonably early summoning of a physician (on the day of clinical onset or the following day) or his prompt diagnosis and treatment appear sufficient to prevent a fatal outcome.

While no statistical data are available from which to draw definite conclusions, it is felt from personal observation that too many physicians are administering antitoxin subcutaneously. In view of the delayed absorption via this route, it would seem that intramuscular injection should be employed as a routine in all but possibly the very mildest cases seen at or near the onset.

The following are evidently instances of parental ignorance or neglect:

Child, four years old, subject to sore throat; mother not worried and did not call a physician until five or six days after onset.

Parents, poor and illiterate; mother would not call a physician despite husband's protests; no medical attention until more than three days after onset; case of pharyngeal type.

Mother thought child had tonsillitis; did not call physician until six days after onset.

Physician first called on what parents said to be the day following onset; patient found to be toxic with badly swollen neck; physician went to get antitoxin, but patient died before his return. He stated that the onset must have been at least five days before he was called to see the case.

Physician, called four days after onset, found the patient, a housewife, age 39 years, extremely toxic.

Three deaths occurred during an outbreak in a Polish settlement. Fearing quarantine, these people would not call a physician until the illness became grave. Lack of early isolation favored rapid spread of the disease among neighboring children.

At least twelve patients are known to have been found moribund at the physician's first visit.

In the following instances the physician was seemingly at fault:

A case was hospitalized three days after onset as cerebrospinal meningitis.

A physician attended a case from onset for five days. No antitoxin given until a second physician came on the case at the end of that period.

A physician, called at onset, treated a case of laryngeal diphtheria as broncho-pneumonia for seven days. Antitoxin not administered until patient was hospitalized seven days after onset and physician's first visit.

A patient was cared for by a physician for three days for a "cold". Had been called two days after onset; case of naso-pharyngeal type.

Physician first saw patient, age 7, three days after onset. Child complained of sore throat and cultures were taken which were reported negative. Physician gave 1500 units of antitoxin and prescribed a gargle; diagnosis; tonsillitis (Quinsy sore throat). The physician told the mother to call him if the child was not better in a day or two. Called two days later he informed the mother that it was a case for a throat specialist. The second physician called saw at once that it was an advanced case of diphtheria and 20,000 units of antitoxin were given. The child showed some improvement but died 14 days after onset of acute myocarditis.

The following two instances illustrate what were apparently very virulent infections with the blame difficult to fix:

A child, two years old, was out playing the day before death. It became croupy in the evening. A physician was called the next day but the child died shortly after the administration of antitoxin.

A physician is said to have been called the day after onset to see a laryngeal case in a child seven years old. The child was intubated and died almost immediately. Antitoxin was not given because of lack of time. The child had attended school the day of onset.

With artificial, active immunization of the juvenile population from about six months or a year to about fourteen years of age we have every reason to believe that diphtheria would become a negligible factor as a cause of illness and death. In the meantime, the case fatality rate continues to challenge the medical profession to further reduction. With such a potent, specific therapeutic agent as diphtheria antitoxin readily available, the more regrettable are any deaths from this disease, and the more hopefully should we be able to look forward to further reduction in case fatality. Granting, because of the variable human factor, the existence of an irreducible minimum under existing conditions below which it would be practically impossible as a community measure to attempt to reduce the fatality rate, the present study indicates that a further marked reduction may reasonably be expected through the concerted efforts of private practitioners, health officers

and unofficial health agencies. Even with the attainment of what might be considered minimum rates, energetic effort will continually be necessary to attempt to prevent any undue increase. Private physicians should always give antitoxin immediately and in adequate amount on reasonable suspicion, depending upon the laboratory examination merely as corroborative evidence except in the very mildest, atypical cases. Health officers and unofficial health agencies should continually stress in their health education activities the importance of seeking medical advice earlier and more often for all illness in children.

SUMMARY

1. The fatality rate of 5.6 per cent. and the mortality rate of 6.3 per cent. are the lowest and second lowest respectively on record in the State.

2. From a study of 117 investigated diphtheria deaths out of 226 reported during 1927 for the State, exclusive of Boston (40), and two non-resident deaths, the following points are noted:

a. Sex distribution is characteristic. The percentage of deaths under five is somewhat smaller than is usually expected.
b. There is an increase in deaths over 1926 among those in better economic circumstances.
c. There is an increase over 1926 in discovered probable sources of infection.
d. A seemingly excessive number of deaths among those of good economic status and receiving medical attention during the first three days of the disease suggests the possibility that a few of the deaths may be unavoidably due to abnormal susceptibility and preventable only by active immunization.
e. Fifty-seven per cent. of 112 patients had been hospitalized of whom about 75 per cent. were not admitted until four days or more after onset. In all 117 of the cases studied, a physician was called at some time during the illness.
f. Laboratory examination was made in slightly over half the cases, only three-quarters of which examinations were reported positive.
g. One case was complicated by a diphtheritic vaginitis.
h. Antitoxin was administered at some time to 114 of the 117 cases studied, in forty-seven instances in multiple doses.
i. The most important cause of death appears to be the failure of the parents to call a physician at the beginning of the illness. Some deaths appear also to have been due to inadequate medical attention.
j. Approximately half of the patients died during the first six days of the disease.
k. Two individuals are known previously to have been given toxin-antitoxin. In one case the treatment had been given but a month previously while the other patient, treated five years before had never been re-Schick tested.
l. The largest number of cases attended by any one physician was five; another saw four; two, three; and seven, two.
m. From the data available, sixty-four deaths appear to be more directly the fault of parents; fourteen, of the physician, and twelve, of both. In the remaining twenty-seven instances, either the fault could not be assigned because of insufficient data, or death appeared due to an extremely virulent infection. Examples illustrating these various groupings are cited.

REFERENCES

1 Lane, Edward A., and Forsbeck, Filip C.: Diphtheria Deaths in Massachusetts, 1926, New England Journal of Medicine, Vol. 198, No. 2, pp. 73-75, March 1, 1928.
2 Carey, Bernard W.: Lessons from a Study of One Thousand Diphtheria Deaths, Boston Medical and Surgical Journal, Vol. 180, No. 3, pp. 67-70, Jan. 16, 1919.

THE INJECTION TREATMENT OF VARICOSE VEINS

A Preliminary Report

BY HILBERT F. DAY, M.D., F.A.C.S.,* AND WALTER S. LEVENSON, M.D.*

THE attempt to obliterate varicose veins by the injection of chemical substances had its inception abroad. In 1904 Tavel used five per cent. solution of phenol with some measure of success. Little enthusiasm greeted the pioneer work and it remained for Sicard, Gaugier and Genevrier to popularize this new and valuable treatment several years later. These French workers used the salts of sodium and of quinine. Various other chemical substances have been tried with varying success, and of these may be mentioned sodium citrate by Troisier, biniodide of mercury by Montpellier, glucose by Nobl and Pregl's solution (iodine) by Bardy.

In the United States the subject has gained in popularity during the past few years, and the injection of varicose veins seems to have a definite place in our therapeutics, especially with sodium chloride and glucose.

For the past year, we have been treating most cases of varicose veins at the Boston Dispenary by injection. Our object has been to develop an ambulatory treatment for these numerous patients who have come for years for treatment, now for pain, now for swelling, and again for eczema and ulcer. If operation offered them anything, they were not able to take advantage of it, for they could not leave their work nor could they leave their children at home. Aside from these economic questions, there were some, such as actors, who emphasized the aesthetic side and preferred injection.

It has not been our object to develop any new chemical substances for injection, but to confine ourselves to the use of sodium and quinine salts, and rather to determine the efficacy and practicability of these salts, and to develop a technique which will give the desired results in the shortest time, with the least inconvenience to the patients.

*For record and address of author see "This Week's Issue," page 952.

The ideal chemical substance for injection should fulfill the following main requirements: (1) it should irritate the intima strongly, but not cause sloughing if deposited in the perivenous tissues; (2) it should have no general effect; (3) toleration of the vein to the substance should be slow or nil (so that in repeated injections larger doses are not necessary). None of the salts are ideal, but with careful and uniform technic we have been able to minimize any shortcomings.

It is not yet certain what histological-pathological change is to be expected in the vein after the intima has been irritated. It had been hoped that the walls of the vein could be caused to agglutinate without thrombosis, and although many on palpation have felt as if obliterated by primary agglutination, experiments on dogs and examination of portions of veins removed from injected patients seem to indicate otherwise. At any rate, if thrombosis is to be expected in a great percentage of cases, we believe that these aseptic thrombi are intimately associated with the vessel wall throughout. In this respect they differ from infected thrombi which may be friable and which do give emboli. As far as the mortality of the injection method is concerned, we are able to agree with the recent editorial* in the *Journal of the American Medical Association*, which in several thousand injected cases found the figures much lower than for the operated cases. In our series we have had no deaths.

The results obtained at the Boston Dispensary have been most gratifying, and in a later communication we hope to report on numerous details of technic and treatment and to include some observations on glucose solution and sodium salicylate solution. There are practically no contra-indications to the injection treatment, except obliteration of the deep veins, and we have been able to start treatment in cases with large ulcers, aiming to obliterate veins beneath the ulcers. Our efforts in this respect have been met with encouraging results. In cases which have large varices from the fossa ovalis to the knee, we have excised this portion and injected the varices below the knee. The operation is of short duration and the patient can be discharged from the hospital in two or three days.

It is with gratification and satisfaction that we can add our preliminary observations to the rapidly increasing amount of American literature, and we hope that they will stimulate further interest in this valuable treatment of that debilitating and incapacitating condition, varicose veins.

*August 4, 1928, page 322.

ASSOCIATION OF RECORD LIBRARIANS OF NORTH AMERICA

Through the courtesy of the American College of Surgeons, record librarians from all over the country came together during the week of October 8 to 12, not only for meetings of their own, but to assist the Hospital Section of the College on the program on Case Records in Hospitals. Their meetings were held in the State Suite at the Copley-Plaza Hotel, and in an adjoining room they prepared an excellent exhibit of records and record room equipment. There was a registration of nearly one hundred, some coming from as far west as Tacoma, Washington; north, from Toronto, Ontario; and south, from Tennessee.

There are local organizations in several States,—east, west and central,—the Boston Association being the oldest, dating from February, 1916. For purposes of larger opportunity for service, it was decided at the October Session to establish a country-wide association to meet once a year. Accordingly, on October 11th, the Association of Record Librarians of North America came into existence, and elected the following officers to serve for the first year:

President, Mrs. Grace W. Myers, Massachusetts General Hospital, Boston, Mass.

Secretary, Miss Frances Benson, Bryn Mawr Hospital, Bryn Mawr, Pa.

Treasurer, Miss Florence G. Babcock, University Hospital, Ann Arbor, Mich.

The objects of the Association are: "To elevate the standard of clinical records in hospitals, dispensaries, or other distinctly medical institutions; to serve as a means of intercommunication between record librarians; and to encourage the training of record librarians to the end that they may render intelligent service in that capacity and thus assist in the promotion of efficiency in hospitals."

All record librarians who registered at the Boston Session may become charter members by sending their names and addresses to the Secretary and their membership fees of $2.00 to the Treasurer before April 1, 1929. Others desiring membership should communicate with the Secretary.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14381

DYSPNEA AND ORTHOPNEA WITHOUT DISCOVERABLE DROPSY

MEDICAL DEPARTMENT

A Scotch-American printer fifty-two years old entered the hospital December 8 complaining of a collapse four days before admission, with dyspnea, orthopnea and weakness.

Three years before admission he had occasional attacks of pain across the base of the heart lasting a few minutes, sometimes running up to the neck or through to the back. He was slightly dyspneic and tired more easily than usual. He was, however, in good health until a year and a half before admission. Then he had substernal oppression on exertion radiating to both arms, lasting a few minutes and relieved by resting. A year before admission all his teeth were extracted at once. This nearly finished him. Ten months before admission he had attacks of dyspnea, orthopnea and choking at night, often waking him. These increased until six months before admission, when he gave up work and had to spend nights sitting up in a chair. He was then seen by Dr. Paul D. White, who says that he was exhausted, had lost forty pounds recently and was very much discouraged. He had been taking fifteen drops of digitalis t.i.d. without relief. Examination at this time was similar to that done in the Out-Patient Department as reported below. He was referred to another physician of the hospital staff, who prescribed three months in bed.

Examination in the Out-Patient Department May 13, seven months before admission, showed a healthy looking man. The heart was enlarged to the left, with the apex in the sixth space. There was a precordial systolic and an early diastolic, more marked in the aortic area. There was wide percussion over the great vessels. Corrigan pulse. Blood pressure 202/82.

Three and a half months before admission the patient resumed very mild activity with some dyspnea and orthopnea.

November 10 he was sent to the South Medical Department. Examination showed his pupils and knee-jerks normal. A Wassermann was moderately positive. He was given a course of treatment. His general condition improved.

November 17 examination showed him pale and thin, but looking better than when seen by Dr. White six months earlier. The apex impulse of the heart was in the sixth space, 11 centimeters to the left, 3 centimeters beyond the midclavicular line. The dullness in the second space was 5 centimeters to the right and 3.5 to the left. There was no abnormal pulsation at the base and no visible tumor. Normal rhythm. Rate 100. Blowing systolic and diastolic murmurs heard all over the precordia. Blood pressure 174/108; practically the same in both arms. Pulses not especially of the Corrigan type. Arterial pulse visible in the neck. Slight tracheal tug. Heart sounds largely masked at the base by murmurs. At the apex in the recumbent position was also heard a slight middiastolic rumble. X-ray examination at this time showed moderate increase in the transverse diameter of the heart, the greatest enlargement being in the region of the left ventricle. The supracardiac shadow was wide both in the anteroposterior and the oblique view. There was marked prominence of the ascending aorta, also in the region of the aortic knob. The oblique view showed marked dilatation of the supracardiac shadow. Measurements: right 4.4, left 10, total transverse 14.4, great vessels 8, chest 24.5.

Four nights before admission he collapsed, sweat profusely and had to be taken home. Since that time he had been in bed, with paroxysmal dyspnea, orthopnea, very bad heart sounds and a short systolic and an aortic diastolic murmur. The morning of admission he was seen by his physician, who thought he was in extremis.

There is no family history except that a sister died suddenly of unknown cause.

No past history was obtained.

The temperature, pulse, respirations, urine and blood are not recorded.

The patient entered the Emergency Ward in complete collapse, ashy pale, cyanotic, sweating and gasping for breath. He was seen immediately and was sent at once to the medical ward, where it was hoped that a Gatch bed and rest would revive him. He died in the elevator.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

We can sum up the present illness by saying that a man of fifty-two has shown two manifestations of heart trouble, passive congestion and angina pectoris. He has dyspnea, orthopnea and pain. All these seem clean-cut enough. There is nothing else complained of to make us look elsewhere in the body. We have also this aortic diastolic murmur, which is very important if confirmed. The short systolic does not help us much.

He was given a course of treatment in the South Medical Department. That in itself is

evidence of syphilis. They not only found his Wassermann positive, but (since they treated him) they thought he had syphilis, which is a different thing. They never begin treatment for a Wassermann alone. So the Syphilis Department, who know more about it than the rest of us, think he had syphilis.

"His general condition improved." That is surprising. We do not expect that under treatment for syphilis if there is syphilitic aortitis. We always give that treatment because it is the only rational thing to do, but I am surprised when they improve at all.

NOTES ON THE PHYSICAL EXAMINATION

It is always satisfactory to have a definite confirmation of a Corrigan pulse as shown in the pulse pressure of 120. We have every reason to be confident that they were right in what they said about that aortic diastolic murmur. We are thinking then of the type of heart disease with great cardiac hypertrophy and with aortic regurgitation, apparently not of one of the main types, syphilitic or rheumatic. We have nothing in the history to make us think of either of those things. But we shall look for evidence of them as we go on.

That heart certainly is enlarged if we pay attention to percussion. One is thinking of a definite disease in the aorta. 8.5 is certainly too wide.

They have done what they could to find aneurysm.

"Blood pressure 174/108; practically the same in both arms." That is not so clear as it was before in favor of what we call Corrigan pulse.

"Slight tracheal tug." What does that mean?

A STUDENT: Aneurysm.

DR. CABOT: Yes; but you can go wrong on tracheal tug in two important ways. First a pulsation that goes in and out, forward and backward. Put your finger under the cricoid and you feel that pulsation. That is nothing. Tracheal tug must be an up and down pulsation. The second source of error is a tracheal tug that comes during inspiration only. A good many patients without aneurysm have this. In my experience it is very rare to be sure of it. It must be up and down and it must go with every beat continuously. It is a very important sign if it is present. There is almost no record of its occurrence in anything else but aneurysm.

That middiastolic rumble tends to swing us over to the other type of heart disease, rheumatic; but otherwise all the evidence is the other way.

The radiologists do not definitely say whether they think there is aneurysm or not. It is my impression that they do, at any rate that the arch is abnormally enlarged. That was their statement, that it was a diffuse dilatation, but they could not find any single aneurysm fluoroscopically. Of course we have to remember that mere arteriosclerosis can give us diffuse aortic dilatation without any aneurysm at all. Aneurysm breaks and arteriosclerotic dilatation does not—a very important difference for the patient. Otherwise you might say that it is merely a play on words to distinguish between dilatation and aneurysm. Diffuse arteriosclerotic dilatation does not give pressure signs, does not cause pain, does not break. It is very important to make up our minds which it is. But I cannot be at all sure from that X-ray examination. It may turn out not to be aneurysm when the secrets of the facts are revealed, but I should say that that could not be an ordinary arteriosclerotic aorta.

DIFFERENTIAL DIAGNOSIS

Let us start with the things we know best and work out towards our uncertainties. We know that he has aortic regurgitation. We do not know of any other valve lesion. He is a middle aged man or past it, and it is a good general rule that a man who begins in middle age to suffer from heart trouble, and that aortic regurgitation, has syphilitic aortitis. In support of that is the pain, which we often see in aortic regurgitation due to syphilitic degeneration, because the process goes around the mouths of the coronary arteries. We do not get such pain in rheumatic aortic trouble. The patient's pain inclines us still further to believe this is syphilitic. Also we have a positive Wassermann and the diagnosis of the South Medical Department on which they must have started their treatment. At one time he has had a Corrigan pulse. Corrigan pulse is much commoner with syphilitic disease in the aortic valve than it is with rheumatic disease in the aortic valve. Rheumatic trouble in the aortic valve makes the leaflets stick together, not in every case but in at least four out of five, and therefore stenosis goes with it, and with stenosis you rarely get a Corrigan pulse. On the other hand syphilis draws back the leaflets, widens them, and gives you aortic regurgitation such as goes with Corrigan pulse. That evidence is weakened by the fact that on second examination he did not have anything that was suggestive of Corrigan.

A STUDENT: Dr. White's opinion was that it was not Corrigan.

DR. CABOT: Dr. White says it is not?

A STUDENT: That is, he said it was only suggestive, not definite.

A STUDENT: What evidence have we of passive congestion?

DR. CABOT: Very little is said about it. I should like to know what they found in his lungs and legs. If he had no passive congestion we should look for a type of disease blocking the coronary rather than one causing stasis.

A STUDENT: How do you explain the dyspnea and orthopnea otherwise?

DR. CABOT: It is hard to. You have to say that there is some passive congestion without

clear signs. But such a patient ordinarily shows some fluid. Dropsy comes a little later than difficulty in breathing.

Dr. Tracy B. Mallory: It is not in the record, but Dr. William D. Smith saw him the morning of admission and said that at that time, although he did not want to examine him very much, he found no dullness at the bases, but a few râles.

Dr. Cabot: And nothing is said about his legs?

Dr. Mallory: No. No edema.

Dr. Cabot: In the three "l's"—lungs, liver and legs,—look especially for passive congestion. Dr. Mallory says no edema, so I should say there is remarkably little evidence of passive congestion, which strengthens us on the side of the syphilitic process, because a syphilitic process involving the coronaries may produce no stasis. On the whole I think, as I imagine you do, that this is syphilitic aortitis with aneurysm, with narrowing of the coronary arteries and death from that trouble rather than from a rupture of the aneurysm into the pericardium, which is the other common cause for sudden death in such a case as this. Aneurysm rarely breaks externally. Often they break internally, and most often into the pericardium. He may have had that, but we have no reason to suppose so.

In the rest of the body we have little to make us think of disease. Have we a urine examination?

Dr. Mallory: No.

Dr. Cabot: On the face of the facts given I do not see what more we can say.

A Student: Do you ever get tracheal tug in aortic insufficiency without aneurysm?

Dr. Cabot: Not so far as I know. I never heard of it. The only thing besides aneurysm is a tumor in close apposition with the aorta.

Clinical Diagnosis (from hospital record)

Luetic heart disease.

Dr. Richard C. Cabot's Diagnosis

Syphilitic aortitis with aneurysm.
Narrowing and occlusion of the coronary arteries.

Anatomic Diagnoses

1. *Primary disease.*

Syphilitic heart disease—aortic insufficiency.
Syphilitic aortitis.
Aneurysm of aortic arch with erosion of manubrium.
Coronary sclerosis.
Fibrous myocarditis.
Adhesive pericarditis.

2. *Secondary or terminal lesions.*

Arteriosclerotic nephritis.
Chronic passive congestion.

Dr. Mallory: The first thing we noticed in removing the sternum was that something was tightly adherent beneath it. It stripped off with difficulty and left this little shallow, hollowed-out depression in the posterior surface of the manubrium. Into this depression fitted the middle one and most sharply defined of the three aneurysmal dilatations which you can see here in the specimen. We have a diffuse big sac here at the base, then a sharply outlined one partially filled by thrombus, from far down inside of which the innominate artery takes its origin, and finally a third more diffuse dilatation of the descending thoracic aorta. From the diaphragm down the aorta was not remarkable.

The aortic valve shows surprisingly little involvement. Two of the cusps are perfectly normal. The third one shows at this point a cusp anchored down to the wall. There is not, however, any lesion of the commissure, which is the ordinary spot at which syphilis affects the valves. It unquestionably would have given him a slight degree of regurgitation, but not, I believe, a very marked one.

The type of hypertrophy of this left ventricle fits this assumption. In a hypertensive heart disease one gets a so-called concentric hypertrophy of the left ventricle, that is, it is widened and elongated in almost equal proportions. In a true aortic regurgitation with marked functional regurgitation one gets very marked lengthening in proportion to the widening, often spoken of as eccentric hypertrophy. This ventricle is much more of the concentric type. So we may assume that he had a slight regurgitation, but not a very marked one. The regurgitation itself probably did not have much to do with his death.

The myocardium shows a number of white fibrous scars. The reason for these is obvious on examination of the coronary vessels, which are calcified, their lumen almost entirely occluded. It is not, however, the syphilitic type of coronary disease. The mouths of the vessels are perfectly clear. The important syphilitic involvement seems to begin safely above the level of the valve. The picture in the coronary arteries is apparently a purely arteriosclerotic one. To go with that he had a very marked degree of arteriosclerotic nephritis of the small vascular type and finely granular kidneys, moderately shrunken. So that I think the arteriosclerosis must be placed very high in estimating the cause of death in this case. It is impossible to say whether it is primarily due to arteriosclerosis or to syphilis. It certainly is not purely syphilis, though the rather sudden end, of course, is characteristic of syphilitic disease of the heart.

It is interesting that Dr. Smith, in going over his lungs four hours before death, found no dullness at either base. At the time of necropsy well over a liter of fluid was found in each side which must have accumulated with extreme rapidity during those last three hours. The lungs them-

selves did not show any marked edema. The accumulation was entirely in the pleura.

There was no ascites and no demonstrable edema of the legs at post mortem. The liver did show a moderate amount of chronic passive congestion and two scars which possibly may be syphilitic in origin.

DR. CABOT: What would you guess the heart weighed if you had it separate?

DR. MALLORY: Between five and six hundred grams.

DR. CABOT: You do not believe that aneurysms cause cardiac enlargement?

DR. MALLORY: No, sir. I think the kidney is probably chiefly responsible in this case.

DR. CABOT: Did you say anything about the mitral valve?

DR. MALLORY: Entirely negative.

DR. CABOT: I do not think they can blame us for not making that kidney diagnosis when they gave us no urine report.

The question is asked, "Are there cases of syphilitic aortitis without aneurysm?" There certainly are and in the majority, and with no regurgitation of the aortic valve and no involvement of the coronary arteries. The earlier and I suppose the commonest types of syphilitic aortitis do not give any one of these things. It is when it goes on for a long time that the disease gives a picture like this. Syphilitic aortitis in early stages simply means a ring of disease around the aorta above the valve.

A STUDENT: Do you mean it eventually goes on to aneurysm?

DR. CABOT: No. Many of them do not. In France I saw a very large number of necropsies on Negro soldiers who had syphilitic aortitis. None of them had aneurysm and none of them had any of the other things that do any harm. They were perfectly well men until they were hit in battle.

CASE 14382

ABDOMINAL PAIN WITH VOMITING LEADING TO COMA IN FIVE DAYS AND TO DEATH IN A WEEK

SURGICAL DEPARTMENT

An American girl six years old entered through the Emergency Ward May 12. The complaint was upper abdominal pain of five days' duration and general malaise.

For a week she had had slight cough and "cold". Since its onset the pain had been severe and continuous and accompanied by occasional vomiting. She had been in bed three days. For the past two days she had been very feverish and had appeared very ill. Her bowels had been very regular until recently.

Clinical examination showed a well nourished child, extremely ill and toxic looking, pale and slightly drowsy, although she could be aroused. There were fine crepitant râles at both bases. There was some questionable enlargement of the heart. The action was regular. The sounds were of poor quality. There was a faint friction rub (pericardial?) best heard at the apex, where there was also a faint systolic murmur. There was tenderness throughout the abdomen, greatest in the right upper and lower quadrants, with much voluntary spasm. The extremities, pupils and knee-jerks were normal.

No laboratory findings are recorded. The temperature was 101° to 104.1° by rectum, the pulse 131 to 160, the respirations 41 to 21.

The child went into coma. The case was thought not to be an acute abdominal emergency. May 13 she died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTE ON THE HISTORY

If anybody can make a diagnosis from this history he is a good deal smarter than I am. So far I have not the slightest idea what is going on.

DIFFERENTIAL DIAGNOSIS

I should say she died of "myocardial insufficiency". But let us make some more definite guesses—it does not do any harm.

Could she have had a diabetes? No. She is well nourished. I never heard of a well-nourished child dying of diabetic coma.

Could this be a uremia? No. We have no edema, we have no headache; we have an acute fever, which is not what we expect at all with uremia. We have no evidence of cardiac enlargement. Nothing is said about the breathing, which ordinarily would be noticeable in such a case. I think we can rule out uremia.

Can this be a meningitis? No. We have none of the ordinary characteristic signs in the neck, nothing is said of headache, we have no examination of the spinal fluid. Certainly the history as given is not the history of meningitis. I cannot rule out, however, tuberculous meningitis, which is sometimes very vague in its symptomatology. However, that she should be well nourished with a tuberculosis seems to me very improbable.

Can this be miliary tuberculosis? Yes, so far as I know it can. But I do not believe we can often diagnose miliary tuberculosis unless there has been a previous tuberculosis recognized. Unrecognized tuberculosis in a child of six, glandular tuberculosis, is perfectly possible, and might go with good nutrition.

Could it be appendicitis? Probably not. Certainly appendicitis is rare at six, although it does occur at all ages. Those who saw her must have had that in mind, and they did not think so or they would have operated.

Peptic ulcer, perforated? Also very rare at six, but it does happen. But we have not the picture of acute perforative peritonitis. For

the same reason I do not see how we can consider acute pancreatitis.

Can this be sleeping sickness? I do not see it. The picture is not of steady somnolence. We know of only a very short period of somnolence.

Could it be a poliomyelitis without paralysis? So far as I know it could. But I do not think it can be diagnosed without paralysis.

Acute pericarditis? They thought they heard a rub at one time. I do not think a person dies so quickly of acute pericarditis unless there are other lesions. Acute pericarditis is ordinarily secondary to some chronic debilitating lesion, of which we have no evidence. So I am skeptical about that rub. I do not believe it is acute pericarditis. I have done the best I could. I do not know what it is.

A STUDENT: Could it be pneumonia? There were fine crepitant râles at both bases and a high fever and a slight cough for a week.

DR. CABOT: You have made a better diagnosis, I think, than any I have suggested. We have nothing in the way of characteristic physical signs, but we do not need them. One can die of pneumonia with no recognizable signs.

A STUDENT: There is high temperature, and very often you get abdominal spasm.

DR. CABOT: Yes.

A STUDENT: Don't they very often go into delirium?

DR. CABOT: Yes, especially children. But they do have comatose pneumonia too.

A STUDENT: Do you think she had subdiaphragmatic pleurisy?

DR. CABOT: People do not die of that so far as I know. It is a complication of other more important diseases. She might have that with pneumonia.

A STUDENT: How about influenza with terminal bronchopneumonia?

DR. CABOT: That is all right so far as I know. The pneumonia would be the essential thing.

A STUDENT: Acute rheumatic fever?

DR. CABOT: I do not think it could be acute rheumatic fever with no more physical signs to show for it. I think we can rule that out.

A STUDENT: Did the child die of peritonitis?

DR. CABOT: I think not. I have considered that, and I do not believe it.

A STUDENT: Do you think that questionable pericardial rub might have been the pleura?

DR. CABOT: Yes.

A STUDENT: Typhoid fever?

DR. CABOT: If the history is correct—and that is a big if—typhoid is very improbable. Nobody dies so quickly as this of typhoid without perforation of the intestine or hemorrhage. She certainly did not have either of those, and she was well nourished. I would be willing to make a sizable bet against typhoid.

A STUDENT: How about intussusception?

DR. CABOT: I do not think we have enough evidence of obstruction in the bowel. Intussusception obstructs the bowel, though we sometimes have diarrhea with the obstruction. And it is an acute disease with a good deal more pain than is here suggested. The statements about the bowel are very mild for such a disease. I think we can rule it out.

I can make no better diagnosis than that that you have suggested. I shall not be surprised, however, if it is not that at all.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

General peritonitis.
Acute pericarditis.

DR. RICHARD C. CABOT'S DIAGNOSIS

Pneumonia.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Acute rheumatic endocarditis.
Rheumatic myocarditis.
Acute fibrinous pericarditis (rheumatic?).

2. *Secondary or terminal lesions.*

Acute fibrinous peritonitis (slight).
Toxic necrosis of the malpighian corpuscles.

DR. TRACY B. MALLORY: I am sorry there is not more clinical evidence available in this case, but such as there was is entirely correct. An interesting difference of opinion arose between the medical and surgical men who saw the case. The former felt it to be an acute abdominal emergency and advised operation. The surgeons, however, correctly diagnosed the case as one of pericarditis and wisely refused to operate.

The child died of acute rheumatic heart disease with typical inflammatory involvement of every conceivable portion of the heart,—all the valves, the intima of the auricles, the pericardium and the myocardium. The latter showed typical Aschoff bodies throughout. There was a slight fibrinous exudate in the pericardium, which was the cause of the friction rub heard.

A streptococcus was grown from the heart valves, a common finding in cases of acute rheumatic fever, and no other organisms were recovered. There was no pneumonia.

COMMENT BY DR. CABOT

I ruled out acute rheumatic fever because of the absence of its physical signs in the heart or elsewhere. I should make the same blunder again in a similar case. I do not see why the heart showed so little in life.

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MILK BORNE EPIDEMICS

SIX HUNDRED AND TWELVE epidemics of various diseases have been traced to infected milk supplies in the United States during the twenty years from 1908 to 1927. We are, apparently, a nation which has dedicated itself to quick profits, speed and carelessness. Any and all of these epidemics could have been prevented by proper pasteurization of the milk. There is one good argument in favor of the pasteurization of milk—it destroys disease-producing bacteria; there are no good arguments against it.

The original laws dealing with milk had only to do with its food value, and they established minimum standards of total solids and butter fat content, thus doing away with dilution and adulteration, or filling of milk, i.e., substituting for butter fat some cheaper form of fat. These laws did very well in that they assured the customer of getting what he was paying for. They did not however protect him from getting what he was not paying for in the way of disease producing germs.

Soon after bovine tuberculosis became an established fact a law was passed in Massachusetts in 1895 requiring the tuberculin testing of all cattle. Since at that time tuberculous infection was so prevalent that frequently from thirty to fifty per cent. of the cattle tested were found to be infected, this law was soon repealed to save the farmers from ruin. Tuberculosis and tuberculin testing unfortunately, have been in the public mind ever since, to the exclusion of the greater risks which are inherent in raw milk and which cannot be detected by any amount of tuberculin testing.

We have had our lesson this year as we have had it in years past, and the only logical conclusion which can be arrived at if we wish to prevent future epidemics of milk borne diseases is that all milk should be properly pasteurized. Many cities are approximating this position; the smaller communities are left unprotected, and unnecessarily so. Community pasteurizing plants are practicable, and it is possible, if a public consciousness of the advantages of disease prevention is awakened, to make the country as safe a place to live in as is the city.

To arrive at this ideal condition, however, something more than local regulations are necessary. The Commonwealth has the right and should consider it its duty to see that all of its citizens enjoy equal benefits as regards their health. The State Department of Public Health is trying to accord them these privileges, but its functions are purely advisory. It can advocate laws but it cannot make them. The support of the citizens of the State is necessary if we are to have decent regulations pertaining to the distribution of milk, and this support must be enlisted.

POST GRADUATE INSTRUCTION FOR PRACTITIONERS

AN interesting aspect of post graduate Medical instruction was brought out at the Annual Meeting of the Vermont State Medical Society in Burlington by Dr. Alfred T. Bazin of Montreal, President Elect of the Canadian Medical Association. Keenly interested in the organization and betterment of the Medical Profession of Canada he has been influential in establishing courses of instruction in the smaller communities for the doctors residing there who are unable to leave their patients for extended periods of time. There has been no difficulty in securing teachers from the faculties of the Medical Schools and the Staffs of the larger hospitals who are willing to go to the smaller towns to give lectures and clinical instruction. Similar enterprises have been undertaken in some of the United States, particularly in the South, and in Massachusetts courses of instruction have been given in some of the larger cities, which the physicians in the neighboring small towns might attend.

The particular feature of the Canadian enterprise has been the willingness of the Life Insurance Companies to contribute thirty thousand dollars annually to help defray the incidental expenses of these courses. This has been

done for several years and the companies are willing to continue their contributions as long as the courses are successful. Insurance companies are not ordinarily considered to be particularly sentimental. Their contributions are based on the expectation that the expenditure will be repaid in dollars and cents through the saving of life and the shortening of illness and disability brought about by better medical and surgical care.

The Medical Societies of New England may well consider whether any phases of the plans which work well in Canada can be adopted here. It is interesting to note also that a group of business men brought constantly into touch with the work of physicians and surgeons recognizes the monetary value of modern medical science. Is it too much to expect that before long the insurance companies will co-operate with the Medical Societies in asking for higher standards for medical licensure? Here is something directly affecting the well-being of the community. Those officers of the companies who stiffen with age and like to have their backs manipulated may in time come to ask that those so treating them be required to have the same knowledge of the fundamentals as their physicians must have.

DIPHTHERIA DEATHS IN MASSACHUSETTS

THE chronological report of diphtheria deaths in Massachusetts which appears on page 939 of this issue is of especial interest to public health officials and should be to all general practitioners of medicine.

The control of diphtheria stands as one of the outstanding illustrations of the progress of preventive and therapeutic medicine. It is almost within the power of Society to prevent its operating as a cause of death. The irreducible diphtheria mortality can be brought to lower figures than those shown by this report.

The supervision of the carrier, the employment of t-a-t and the use of antitoxin in the early manifestation of the disease are scientific applications of preventive and therapeutic medicine which can practically bring the disease under control.

Although there will always be sporadic cases, the disease can be made more rare than typhoid fever and almost equally as infrequent as smallpox when controlled by general vaccination if the medical profession and the laity will accept the services of health officers and well-qualified doctors.

Recent graduates will probably never know the fear pervading communities in former days when large numbers of children were stricken with the disease and died, but these statistics show too plainly that some doctors are even now careless or ignorant.

It is a sad commentary to note that in the age group of five to nine years diphtheria was the second most frequent cause of death in 1927.

Since 1894 the Commonwealth of Massachusetts has certified to the fitness of physicians to care for the illnesses of its citizens. It imposed upon a board the responsibility of ascertaining the qualification of those who would treat the diseases of its people and also gave to this board power to exercise disciplinary authority in cases where gross misconduct is evident.

The cause, prevention and treatment of diphtheria should be common knowledge of physicians. If there are cases where diphtheria deaths may have been the result of ignorance or carelessness such should be reported to the Board of Registration. We believe that the board will deal with such cases judicially and when the evidence warrants will prevent further inefficient service.

The medical profession should not wait for lay criticism to spur it to action.

The honest painstaking doctor has no reason to fear action by this board. If fear of the board can be put into the hearts of those responsible for some mortality statistics the records will in the future show a lower mortality rate.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

HOCHHAUSER, EDWARD. President, Altro Work Shops, Inc. His subject is: "The Story of the Altro Work Shops". Page 915. Address: 1021 Jennings Street, New York City.

CRANE, BAYARD T. M.D. Harvard, 1901. Superintendent Maryland State Sanatorium, 1907-1909. Private Practice (Tuberculosis), Rutland, Mass., 1909-1920. Medical Director of Central New England Sanatorium, Inc., 1920 to date. His subject is: "The Place of the Industrial Colony in Getting the Consumptive Back on the Job". Page 918. Address: Central New England Sanatorium, Rutland, Mass.

LINENTHAL, HARRY. A.B., M.D. Harvard, 1904. Physician-in-Chief, Beth Israel Hospital; Professor of Clinical Medicine, Tufts College Medical School. His subject is: "The Work of the Placement Committee of the Boston Tuberculosis Association". Page 926. Address: 45 Bay State Road, Boston.

HAMBLEN, ANGELINE D. A.B. Radcliffe, 1915. Statistician Massachusetts Department of Public Health, 1920. Address: Room 546, State House, Boston. Associated with her is:

JOSLIN, ELLIOTT P. A.B., M.D. Harvard Medical School, 1895. Consulting Physician to the Boston City Hospital. Physician to the New England Deaconess Hospital. Clinical Professor of Medicine, Harvard Medical School. Member, American Society of Clinical Investigation, et al. Their subject is: "The Relative Position

of Diabetes as a Cause of Death". Page 933. Address: 81 Bay State Road, Boston.

DAYTON, NEIL A. M.D. Ohio State University School of Medicine, 1915. Director, Division of Mental Deficiency and Division of Research, Massachusetts Department of Mental Diseases. Member, Massachusetts Psychiatric Society, New England Society of Psychiatry, American Psychiatric Association, American Association for Study of Feeble Minded, American Statistical Association. His subject is: "Height, Weight, and Intelligence Relationships of 3553 Retarded School Children". Page 934. Address: Room 109, State House, Boston.

LANE EDWARD A. A.B., M.D. Cornell University, 1916. C.P.H. Johns Hopkins University, 1924. District Health Officer, Massachusetts Department of Public Health. Assistant in Public Health Administration, Harvard School of Public Health. His subject is: "Diphtheria Deaths in Massachusetts, 1927". Page 939. Address: 546 State House, Boston.

DAY, HILBERT. Ph.B., M.D. Harvard Medical School, 1905. F.A.C.S. Surgeon-in-Chief, Boston Dispensary; Surgeon, Cambridge Hospital; Associate in Surgery, Peter Bent Brigham Hospital; Faculty Instructor in Surgery, Harvard Medical School; Consultant various hospitals. Address: 412 Beacon Street, Boston. Associated with him is:

LEVENSON, WALTER S. A.B., M.D. Harvard, 1922. Junior Assistant Surgeon, Boston Dispensary; Surgical Out-Patient Department, Beth Israel Hospital. Their subject is: "The Injection Treatment of Varicose Veins". Page 944. Address: 412 Beacon Street, Boston.

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VARICOSE VEINS

ONE more advantage appears to have been derived from the World War, if we are to share the enthusiasm of the advocates of injection treatment for Varicose Veins. We can readily appreciate how the war might have stimulated a study of the condition and this it apparently did. When there was need for men and when Varicose Veins were a bar to enlistment it was but natural that extra effort should be put forth to find a way to remove this obstacle to military service. Certainly the literature is full of discussions of the anatomy, the pathology and of experiences with the various methods of treatment. It has always been difficult to create any great amount of enthusiasm over a condition of this sort. Results have been so long in coming and so uncertain of permanency. Ulcers, that so frequently complicate them, are surgically so uninteresting and from time to time present such trifling variations that the busy surgeon sidesteps their dressing when he can and finds little interest in their weary course. Some interest developed when the radical operative treatment was advocated for a certain class of them but even that surgery appeals to but few. A number of interesting observations have been derived from the studies of Delater and others in France, Germany and England which have led up to the method which, just at present, holds the center of the stage, viz.; the use of aqueous salycilic solutions for injection into the varicosities of the lower extremities, whether accompanied by ulceration or not. Localized coagulation of the blood in the varix takes place and, forming firm connections with the vessel wall, organizes and eventually obliterates the varicosities. Those who are most impressed with the value of the method never have had, and some never have heard of any unfavorable after-effects or failures. Others have. Very plausible arguments are advanced as to why there should not be trouble from thrombi but apparently these reasons do not always hold good. At any rate the method has its appeal because it is not difficult of application, is quick to bring about the results claimed for it, does not necessitate any lay off on the part of the patient and obviates the use of supportive apparatus elastic stockings, etc.

Wherever the truth may lie, ultimately, some good has been done by drawing attention to a condition which, however inglorious it may be to suffer from it or to have to treat it, is a most distressing and incapacitating ailment and has deserved more serious consideration than it has generally received. It is a good time now for all who take an interest in the treatment of this condition to review their own knowledge and experience and check it off against that of those who have recently written and reported. The library will try to provide opportunity for doing this during the fortnight beginning November 12th, by putting out in Holmes Hall the current and more recent literature on the subject of Varicose Veins.

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Burrill, Kenneth C., 133 Morse Avenue, Brockton.
Cahill, Ella P., N. E. Hosp. for Women, Roxbury.
Cammisa, James J., 73 Mountain Avenue, Revere.
Canzanelli, Pericles, 558 Mt. Auburn Street, Watertown.
Carroll, Walter J. E., 360 Concord Street, Framingham.
Casten, Virgil G., 206 Melrose Street, Auburndale.
Clarkson, Amos P., 77 Park Avenue, N. Y. C.
Clow, Henry L., Danvers State Hosp., Hawthorne.
Cooke, Richard C., 447 Saratoga Street, E. Boston.
Costanza, Fred P., 238 Maverick Street, E. Boston.
Cournoyer, Romeo J., 82 E. Concord Street, Boston.
Cronin, Jeremiah J., 36 Mt. Vernon Street, Lawrence.
Davidow, Morris N., 1493 Cambridge Street, Cambridge.
Day, Kenneth K., 240 Winslow Road, Waban.
Derick, Clifford L., 721 Huntington Avenue, Boston.
DeSimone, Carl A., 73 Elmira Street, Brighton.
Dion, Asa J., Carney Hospital, South Boston.
DiRago, Joseph, 44 York Terrace, Brookline.
Dougherty, Harry L., 141 Clark Avenue, Chelsea.
Draper, Rose A., Falmouth Heights, Mass.
Duncan, Christopher J., 267 Railroad Avenue, Norwood.
Dupre, Guyon G., 82 E. Concord Street, Boston.
Durant, Harold J., St. Joseph's Hosp., Paterson, N. J.
Dyer, Charles E., Boston City Hosp., Boston.
Faherty, John C., Boston City Hosp., Boston.
Finnegan, William F., Cambridge City Hosp., Cambridge.
Flick, Gervase C., 16 Pond View Avenue, Jamaica Plain.
Fontaine, Auray, State Hospital, Worcester.
*Foye, Lucian C., 36 Hull Street, Boston.
Freeman, Harry, 87 Fowler Street, Dorchester.
Frisbie, Gertrude F., 200 Liberty Street, Lowell.
Gibson, Stewart M., City Hospital, Worcester.
Glazer, Lewis, 65 Blossom Street, Chelsea.
Goldberg, Samuel B., 31 Wave Way Avenue, Winthrop.
Golden, James L., 58 Nashua Street, Woburn.
Goldman, Morris E., 181 Woodrow Avenue, Dorchester.
*Goldstein, Herman H., Beth Israel Hosp., Boston.
Goodwin, Edward S., 333 State Street, Albany, N. Y.
Greenway, Thomas H., 13 Maine Street, Gilbertville.
Grover, Morris L., 26 Wolcott Street, Dorchester.
Guthrie, Riley H., Psychopathic Hosp., Boston.
Haley, William W., Boston City Hospital, Boston.
Hathaway, Louis E., Jr., 32 June Street, Fall River.
Higgins, Walter, Lawrence General Hosp. Lawrence.
†Hopkins, Nehemiah S., 220 Clarendon Street, Boston.
Horlick, Simon S., 87 Wheatland Avenue, Dorchester.
Hussey, Joseph M., St. Vincent Hospital, Worcester.
Ingall, Morris, 74 Elm Hill Avenue, Roxbury.
Jacobus, Kenneth W. B., Cambridge City Hosp., Cambridge.
Jamieson, Howard M., Medfield State Hosp., Harding.
Kaman, Heinrich, 462 Cambridge Street, Cambridge.
Kanserstein, Arthur, 134 Elm Street, Chelsea.
Kaplan, Israel, 10 Boardman Street, Salem.
Kasheta, Francis J., Lawrence General Hospital, Lawrence.
King, James S., Jr., St. Albans, Vermont.
Kraft, Meyer L., 100 Orange Street, Chelsea.
Langsam, Maurice J., 55 Lanack Road, Brighton.
Lanson, Freeman A., Tionesta, Pennsylvania.
Laroche, Armand, Rutland State San., Rutland.
Lavrakas, Robert C., Lynn Hospital, Lynn.
Leeds, William, 103 Endicott Avenue, Beachmont.
Lewis, Farris J., 523 Newbury Street, Boston.
Lord-Heinstein, Esther L., Memorial Hospital, Worcester.
Mades, Meyer L., Idaho Falls L. D. C. Hospital, Idaho Falls, Idaho.
Malloy, John R., City Hospital, Worcester.
Manning, Arthur F., 50 Russell Street, Waltham.
Martineau, Lawrence A., Boston City Hospital, Boston.
Mastroianni, Nicholas A., Off Cedar Street, Milton.
McCarthy, Lawrence J., St. Elizabeth's Hospital, Brighton.
Merrill, Wiggin L., Jr., 82 E. Concord Street, Boston.
Moore, Clifford D., Lock Box A, Harding.
Mulligan, Francis J., Adams Street, Newton.
Nelson, Nels A., 21 Forsyth Street, Boston.
*Neptune, Edgard M., 86 Westbourne Terrace, Brookline.
*Norton, Hermon, 198 Sumner Street, Newton Centre.
O'Brien, Daniel J., 98 Washington Avenue, Winthrop.
O'Brien, Walter M., 80 Carruth Street, Ashmont.
Olmstead, Hollister K., 100 Boylston Street, Boston.
Osborn, Laurence W., 588 Pleasant Street, Worcester.
Osgood, Winthrop B., Corporation Hospital, Lowell.
Pelletier, Valmore A., Lakeville State San., Middleboro.
Poole, Ragnhild R., The Memorial Hospital, Worcester.
Portnoy, Maurice S., 835 Brock Avenue, New Bedford.
Quigley, Thomas J., St. Elizabeth's Hospital, Brighton.
Read, Dorothy H., 3 King Street, Attleboro.
Repshis, John, Somerset County Hospital, Somerset, Pa.
Ritchie, Morris, 109 Congress Avenue, Chelsea.
Roberts, Alexander M., 561A Shawmut Avenue, Boston.
*Roberts, Sumner M., 32 Lime Street, Boston.
Ronan, Arthur T., 145 Federal Street, Salem.
Rosenblum, Garson M., 147 Olean Street, c/o Fine, Worcester.
Ross, Paul F., 251 Mass. Avenue, Arlington Hgts.
Ross, Robert E., 28 Brookhouse Drive, Marblehead.
Russell, Alexander B., 24 Rupert Street, Springfield.
Rys, Henry A., Mass. Homeopathic Hosp., Boston.
Salter, William T., 229 Adams Street, Milton.
Segal, Jacob, Carney Hospital, South Boston.
Segool, Samuel H., 24 Mattapan Street, Mattapan.
Shain, Joseph Herman, 29 Stratton Street, Dorchester.

Sieve, Benjamin F., 1 Gannett Street, Roxbury.
Simmons, Nathan J., Carney Hospital, So. Boston.
Simpson, Oscar S., 43 Harrison Place, Marlboro.
Spear, Carl, 709 No. George Street, Rome, N. Y.
Spies, Tom D., 721 Huntington Avenue, Boston.
Strauss, Maurice J., Boston City Hospital, Boston.
*Sweet, Richard H., Mass. General Hospital, Boston.
Symington, Clifford L., 27 Huntington Street, So. Manchester, Conn.
Ulin, Robert, 8 Carlos Street, Dorchester.
Vinnecour, Max I., 11 Observatory Avenue, Haverhill.
Wassermann, William R., 34 Hartwell Street, Roxbury.
Watson, Lester D., Mass. Homeopathic Hospital, Boston.
West, Anthony J., St. John's Hospital, Lowell.
Wetherbee, Martha M., 43 Wendell Street, Cambridge.
White, Sarah P., University Hospital, Syracuse, N. Y.
Woodruff, Luman A., 82 E. Concord Street, Boston.
Wylie, Earl J., Cambridge Hospital, Cambridge.

Medical Institutions Granting Degree

	No. Ex.	No. Reg.	Year	No. Rejected	Year
Tufts	58	1	1914		
		2	1926		
		5	1927		
		49 57	1928	1	1928
Harvard	16	1	1925		
		3	1926		
		3	1927		
		9 16	1928		
Boston College of Physicians and Surgeons	9	1	1927	2	1927
		4 5	1928	2 4	1928
Kansas City University of Physicians and Surgeons	6	1 1	1928	1	1926
				2	1927
				2 5	1928
Massachusetts College of Osteopathy	28	8 8	1928	3	1925
				3	1926
				5	1927
				9 20	1928
Kirksville College Osteopathy and Surgery	5	1	1926	3 3	1928
		1 2	1928		
University of Montreal	5	1	1922	1	1922
		1 2	1925	1	1925
				1 3	1927
University of Western Tenn.	1			1 1	1913
Royal University of Naples	1			1 1	1923
Middlesex College of Medicine and Surgery	13	1	1925	2	1923
		2	1927	2	1924
		2 5	1928	1	1925
				2	1927
				1 8	1928
N. Y. Medical College and Hospital for Women and Child.	1	1 1	1911		
Phila. College of Osteopathy	4	4 4	1928		
University of Tenn.	2	1	1921		
		1 2	1922		
Boston Univ. School of Medicine	16	2	1927		
		14 16	1928		
L. I. College Hospital	1	1 1	1926		
Yale	1	1 1	1924		
Royal College Physicians & Surgeons, Glasgow	1	1 1	1923		
McGill	1	1 1	1918		
Univ. of Athens	1			1 1	1917
Laval	1			1 1	1925
U. T. Still College Osteopathy & Surgery	1			1 1	1926
Univ. of Wurzburg	1			1 1	1925
American School of Osteopathy	1	1 1	1911		
Queen's University	1	1 1	1928		
Univ. of Louisville	1	1 1	1925		
Jefferson	1	1 1	1928		
Univ. of Vermont	1	1 1	1925		
Johns Hopkins	1	1 1	1928		
State Univ. of Iowa	1	1 1	1925		
Totals	180	'130		50	

Examined September 27th, 1928

Eclectic Med. Inst. Cincinnati		1			
NATIONAL BOARD					
Harvard Med. School	4	3	1926		
		1 4	1927		
Yale Medical	2	1	1925		
		1 2	1927		
Boston University	1	1 1	1927		
Total Registered...		138			

MECHANICS OF THE BRAIN

A private showing of the educational film, "Mechanics of the Brain", was held in the Fine Arts Theatre on November 2, 1928. It was released by the "Sovkino", national movie corporation of Russia, and was filmed in Pavlov's own laboratory in Leningrad. It represents an attempt to present twenty-seven years of uninterrupted thinking concerning the nature of animal and human behavior. Pavlov himself is too much the scientific scholar to popularize his work, and thus disclaims any authorship of the film. The fact remains, however, that the pictures represent the results of his thinking and some of his actual experiments but more of those of his scholars.

The film begins with the showing by diagram and photograph the developing brain conditioning the complexity and effectiveness of animals' behavior as shown by their methods of feeding. In his attempt to analyze human and animal behavior in terms of a simple and definite concept—the conditioned and unconditioned reflex action, Pavlov has elaborated many experiments to prove his point. By salivary fistulas, gastric fistulas, ingenious brain surgery, and a comparison of subnormal humans to the lower races, he has shown that we are born with a multitude of reflexes, so-called unconditioned, upon which basis we build an enormous superstructure of learned acts, or conditioned reflexes. When two brain centres are stimulated simultaneously, a temporary connection is formed between them. If these stimuli are repeated often enough, a permanent connection is made. This new path can be made inactive by inhibition of these stimuli, and this formation and extinction of pathways determines our successful adaptation to the outside world. By removal of certain parts of the brain Pavlov and his co-workers have demonstrated a localization of conditioned reflexes.

Pictures are shown of monkeys who by the sight of a certain colored disc, or a metronome at a certain speed, are taught to run across a cage for food. Dogs secrete saliva at the sound of a metronome and children open their mouths to receive food on stimulation with a rubber tambour. A slight variation in the stimulus causes the loss of the learned reflex, but it is easily re-learned. Reflexes of eating, playing, and co-ordinated movements in humans from birth to six years are pictured in a graded way so that it is evident that the behavior of man grows more complicated through the formation of new conditioned reflexes and the perfection of his motor apparatus.

As an exposition of a sound basis for practical and functional psychology the film is of interest to physicians and intelligent laity.

IMPORTANCE OF UNDULANT FEVER BEING MORE WIDELY RECOGNIZED

Undulant fever, a disease contracted from cattle and hogs which are infected with contagious abortion, is being more widely recognized as a problem of considerable importance from a public health standpoint. A number of cases of this disease have been reported from various States.

The disease of contagious abortion is quite prevalent among cattle and hogs throughout the country. Persons who drink raw milk from infected cattle or who handle hogs or cattle that are infected are likely to contract the disease. The name, "undulant fever", is applied to the disease because the attacks of fever come in waves or undulations. The disease was first recognized on the Island of Malta in the Mediterranean, and it was thought for a time that it was spread only through the milk of goats. It is now known, however, that the disease may be contracted from cattle and hogs. The disease is not only disabling but extremely chronic in duration. The patient may be ill for two or three years before any improvement is noted. Important studies made by Miss Alice C. Evans, a bacteriologist of the United States Public Health Service, have shown the relation between this condition in human beings and contagious abortion in cattle. In certain States it has been said that undulant fever is of greater importance from the standpoint of public health than is typhoid fever. Many cases are contracted from infected milk. Fortunately, however, efficient pasteurization readily destroys any of the germs of this disease which may be present in milk. The chief precautions, therefore, are the use of pasteurized milk and care when coming in contact with animals known or suspected to be infected with contagious abortion. In a series of cases of undulant fever recently studied among adults living on a farm there were 39 males and 6 females; six of the male cases are known to have derived their infection from hogs.

Persons who are employed on farms or in packing houses are likely to contract the disease through exposure in their work; other persons may contract it through consumption of raw milk.—*Bulletin United States Public Health Service.*

THE APPEAL FOR FUNDS FOR THE CHILDREN'S HOSPITAL

On the invitation of Dr. Kenneth D. Blackfan of the Children's Hospital about 100 physicians were invited to a luncheon which was held in the Aesculapian room of the Harvard Club, November 1, 1928. In calling the meeting to order Dr. Blackfan explained the situation with respect to the needs of the Children's Hospital and introduced Mr. Gordon Abbott, Chairman of the Executive Committee, who explained in detail more of the problems incident to the needs of the Hospital, and especially to the completion of the plans of the Executive Committee.

The organization in charge of raising funds was represented by an executive who explained the terms under which the business will be conducted, stating as examples recent drives in New York which have been successful in providing money for expansion of other hospitals. He explained that there would be a series of committees who will deal with different classes of people in this vicinity in a dignified and more or less personal appeal without any of the objectionable methods which are sometimes employed. In addition to the committees of doctors and nurses there will be others who will be able to reach the rest of the public who are interested in promoting the best possible type of hospital service. It is expected that the preliminary campaign will be completed before the middle of November, to be followed by a general luncheon, and after Christmas the drive will be more general.

After this explanation Dr. F. C. Shattuck was introduced, who spoke of his interest in the Children's Hospital, calling to mind the pictures of the earlier

buildings in which the work was begun. He expressed confidence in the interest of the medical profession and the public, for although the necessary contributions may seem large he believes that the appeal is so urgent that the responses will be adequate. He called attention to the fact that the appeal in case of the Children's Hospital is especially to the heart rather than the intellect. It is a great pleasure to note the cordial recognition of this beloved physician by the doctors present as shown by hearty applause on his introduction and at the conclusion of his address.

Dr. Blackfan closed the meeting promptly at the time specified in the invitation and called attention to the bulletin board setting forth the special needs of the Children's Hospital as follows:

1. New physiotherapy department.
2. A reconstruction orthopedic department.
3. Surgical ward.
4. Observation and isolation ward.
5. Nose and throat ward.
6. Nurses' school.
7. New space for pathological work.

The close attention given to all the explanations was evidence of keen interest in and loyalty to the plan now under way.

ADMIRAL GRAYSON HEADS GORGAS MEMORIAL

Washington, D. C., November 1, 1928 (Special). Formally accepting the presidency of the Gorgas Memorial Institute which was recently tendered to him at the annual meeting of the Board of Directors held in Boston on October 10, Rear Admiral Cary T. Grayson announced today that it would be his purpose to maintain the field operations of the organization and to expand its publicity features as far as funds will permit.

"The plan of sending out trained speakers to appear before leadership groups of the various cities of the country in 'caravan' health trips will be continued," he said. "To close the gap between the public and scientific medicine by a tremendous health educational campaign is an imperative issue. We will continue to work in this direction by added newspaper publicity, radio talks, poster service, health corps organizations, and by platform appearances."

Admiral Grayson's application for retirement from the active list of the Navy, effective November 1, has been acted upon favorably by President Coolidge, so that he will be able to devote his entire time to the Memorial activities. President Coolidge is the Honorary President of the Gorgas Memorial. The Surgeon Generals of the United States Public Health Service, Army and Navy, are on the Board of Directors.

REGULATIONS GOVERNING LIQUOR PRESCRIPTIONS FOR MEDICINAL PURPOSES ARE AMENDED

Changes in the regulations governing the issuance of prescription blanks to physicians for use in prescribing liquor for medicinal purposes were announced, October 26, by the Bureau of Prohibition, in an order signed by the Commissioner of Prohibition, Dr. J. M. Doran. The order reads in full text:

To prohibition administrators, and others concerned: Sections 1710 and 1712, of Regulations 2, are amended to read as follows:

Sec. 1710. Stubs to be returned to the Administrator-Prescription blanks on Form 1403 for medicinal liquor are printed in duplicate with stubs attached to both original and duplicate. The stubs of the original prescriptions will not be detached by the physician, but must remain in the book.

The stubs of the duplicate prescriptions issued during the month must be detached by the physician and forwarded to the Prohibition Administrator at the end of the month or within ten days thereafter. Any mutilated or defaced prescription blanks, both original and duplicate, in the possession of the physician must be returned to the Administrator and proper notation made by the physician on the stubs.

The duplicate copies of prescriptions for medicinal liquor written on unofficial forms in emergency cases must be forwarded to the Administrator at the end of the month when issued, or within ten days thereafter. Prescription blanks Form 1403, must in all cases be used by the physician in the order of the serial numbers in the book.

Sec. 1712. Official blanks to be delivered to physicians in person or by registered mail.—Books of official prescription blanks, Form 1403, will be delivered by the Administrator to a physician only upon receipt of a written request therefor signed by the physician, except that if a physician holding a permit to prescribe medicinal liquor personally calls at the office of the Administrator, to whom he is known or properly identified, prescription blanks may be delivered to the physician and a receipt signed by him taken.

In cases where written request is received from the physician for a book of prescriptions, the Administrator will forward it to the physician by registered mail. The book containing all the stubs of the used original prescriptions must accompany the request of the physician for a new book of prescription blanks.

The book of stubs will be returned to the physician by the Administrator, together with the new book of prescription blanks. The book of stubs returned to the physician must be retained by him as a permanent record of prescriptions issued by him, subject to inspection by Federal officers.

Paragraphs 78 and 79, of Regulations 1, are amended to read as follows:

Par. 78. Physicians' prescription books, Form 1403, will be issued from the withdrawal section. Stub books of returned original prescriptions will be promptly checked and records pertaining thereto will be kept current. Each stub in the book will be examined to ascertain particularly the following information:

(a) Whether the previous book was issued within 90 days;

(b) Whether the stubs are signed by the physician in his own handwriting;

(c) Whether the physician's signature and address agree with the card record;

(d) Whether the prescriptions have been written in chronological order;

(e) Whether the kind and quantity of liquor and directions for use are properly stated;

(f) Whether two prescriptions were written for the same patient within 10 days:

(g) Whether the prescription has been given for a disease usually prescribed for;

(h) Whether any prescription was written by the doctor for himself.

Prescription books must be sent to physicians by registered mail when request for the book is made in writing. If the request is made by the doctor in person, a receipt will be taken for the book delivered to him. A record of books issued will be made on Form 1416.

Upon receipt of advice that a doctor has lost his book or that it has been stolen, the doctor will be required to make an affidavit setting out the circumstances. In such cases an inspection should be made with a view to recovering the missing book.

"Physicians' requests for additional books of prescriptions blanks shall be acted upon promptly in accordance with section 1708 (b), Regulations 2.

"Par. 79. The stubs of duplicate prescriptions sent to the Administrator by physicians at the end of each month will be filed in numerical sequence for each physician. These stubs will reuire no audit and will be used only for reference in connection with the audit made of canceled original prescriptions under Paragraphs 598 to 601, inclusive."

Par. 602 of Regulations 1, is hereby rescinded.—*U. S. Daily.*

PELLAGRA AND BLACK TONGUE

A series of studies made by Dr. Joseph Goldberger, and his associates, of the United States Public Health Service, seem to indicate that black tongue in dogs and pellagra in man are practically identical. As far as their studies have been conducted, foodstuffs that appear to be good sources of black tongue preventive are also good sources of pellagra preventive. The list includes such foods as commercial wheat germ, beef muscle, and powdered yeast. Pork liver is a good source of the black tongue preventive, but has not yet been studied in pellagra, as is the case with canned salmon and egg yolk. Maize, whole wheat, cow-pea, soy bean, milk, butter, codliver oil, cotton seed oil, carrot and rutabaga turnip are either poor sources or lacking in the preventive.

CARBON MONOXIDE POISONING

The Bureau of Mines of the Department of Commerce has recently issued a warning regarding the danger of carbon monoxide poisoning from defective or improperly adjusted gas heating appliances and ranges. This is particularly applicable at a season when householders are using more gas and are simultaneously decreasing ventilation by closing up their houses in order to maintain comfortable temperatures. Many persons, according to this report, suffer discomfort and ill-health in the form of lassitude, languor, headaches, and nausea without suspecting the cause to be carbon monoxide arising from the improper functioning or improper use of their gas appliances.

The sound advice is given that, before cold weather arrives, the services of a competent gas man be engaged to inspect the appliances, make necessary repairs, clean dirt and lint that has accumulated in the burners during the year, and then adjust the burners so that good combustion is attained.

ENDEMIC PELLAGRA

The United States Public Health Service has recently reported on its pellagra study, carried out from 1916 to 1921 in certain textile villages of South Carolina. One village, particularly, was studied for the whole five and one half year period. During 1917, according to the report, in an aggregate population of 22,653 individuals, 1,147 cases of pellagra (an incidence rate of 50.6 per 1,000) was observed. Of 4,104 households, 18.5 per cent. had at least one member affected by the disease. The fatality rate did not exceed 3 per cent., although the prevalence was two to six times as much as the experience of the local physicians would seem to indicate. Single women, as compared with the married, widowed or divorced, were relatively exempt from the disease. The disease was shown to be preponderantly one affecting children of from two to fifteen years of age.

RHODE ISLAND MORTALITY STATISTICS: 1927

The Department of Commerce announces that the 1927 death rate for Rhode Island was 1,122 per 100,000 population as compared with 1,269 in 1926. This decrease is accounted for by decreases in the death rates from measles (from 20 to 1 per 100,000 population), pneumonia, all forms (from 111 to 85), influenza (from 34 to 13), cancer (from 128 to 110), diseases of the heart (from 226 to 211), nephritis (from 118 to 104), and whooping cough (from 18 to 6).

The only marked increase in 1927 is shown in the death rate for diphtheria (from 6 to 9 per 100,000 population).

The estimated population was 704,000 in 1927 and 693,000 in 1926.

THE YALE JOURNAL OF BIOLOGY AND MEDICINE FOUNDED

The first issue of *The Yale Journal of Biology and Medicine* will appear in the early part of November. It will be a bi-monthly journal of six copies a year, the first published in October, the last in June. It is a student publication primarily intended for Yale medical students and alumni. The editorial board is made up of students, supplemented by a faculty advisory board. The present advisory board consists of Professors G. H. Smith, Herbert Thoms, and H. S. Burr.

Its contents will include leading articles contributed by members of the faculty of the medical school, and of the department of biology of the university; reviews of clinical and pathologic cases of interest that develop in New Haven clinics; abstracts of student theses, of lectures by visiting scientists, and of proceedings of the university scientific societies; and accounts of all work of research nature that emanate from the Yale School of Medicine.

SUMMER PREVALENCE OF TYPHOID DECLINES

Cases in July and August Less Numerous Than in Preceding Seasons

The incidence of typhoid fever in the United States in the present year has been unusually small, with only 5,821 cases reported by 41 States for the eight weeks from July 1 to August 25, as against 7,690 cases in the same period of 1927 and 8,527 for 1926, it was stated September 18 by the Public Health Service. The full text of the statement follows:

Typhoid fever is one of the few diseases which are usually prevalent during the summer months. This year the number of cases of typhoid fever in the United States has been unusually small.—*U. S. Daily.*

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1927 AND SEVEN YEAR AVERAGE MONTH ENDING SEPTEMBER 29

DISEASES	1928					1927			
	Wk. ending Sept. 8	Wk. ending Sept. 15	Wk. ending Sept. 22	Wk. ending Sept. 29	Average cases reported for week corresponding to September 29 for past seven years.	Wk. ending Sept. 10	Wk. ending Sept. 17	Wk. ending Sept. 24	Wk. ending Oct. 1
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men.	-	1	1	2	1	-	-	2	3
Chickenpox	2	4	6	9	19	8	12	2	2
Conjunctivitis Inf.	-	-	-	-	-	-	-	-	1
Diphtheria	16	10	26	17	36	22	14	17	19
Dysentery Amoebic	-	-	-	-	-	-	-	-	-
Dysentery Bacillary	-	1	-	-	-	-	-	-	1
Encephalitis, Epid.	-	-	1	-	-	-	1	-	-
Favus	-	-	-	-	-	-	-	-	-
German Measles	2	1	-	1	1	-	3	1	-
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	2	3	8	2	2	-	1	1	1
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	-	1	3	-	-	-	1
Measles	13	12	4	11	11	8	4	3	9
Mumps	5	10	4	15	6	6	12	7	11
Paratyphoid Fever	-	1	-	-	-	1	2	-	-
Pneumonia (Broncho)*	12	10	11	12	11	7	5	9	12
Pneumonia (Lobar)	7	13	13	11	12	10	14	14	13
Poliomyelitis	4	4	2	2	5	11	19	12	13
Scarlet Fever	3	6	15	14	28	13	16	18	22
Septic Sore Throat	-	1	-	1	-	3	2	1	-
Smallpox	-	-	-	-	-	-	-	-	-
Tetanus	-	-	-	-	-	1	-	-	-
Trachoma	-	-	-	-	-	-	-	-	-
Trichinosis	-	-	-	-	-	2	-	-	-
Tuberculosis (Pul.)	42	29	28	16	31	34	33	13	33
Tuberculosis (O.F.)	4	1	-	-	2	6	7	1	3
Typhoid Fever	2	4	3	2	9	6	5	9	5
Tularemia**	-	-	-	-	-	-	-	-	-
Typhus Fever	-	-	-	-	-	-	-	-	-
Undulant Fever**	-	1	-	-	-	-	-	-	-
Whooping Cough	43	37	27	20	28	44	52	38	22
Gonorrhoea	14	52	52	36	29	30	21	26	20
Syphilis	24	41	35	30	35	35	15	28	32

* Made Reportable January 1, 1925.
** Made Reportable July 1, 1928.

Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

CORRESPONDENCE

A COMMENT ON CERTAIN EXPRESSIONS OF OPINION IN THE PAPER BY F. VON MÜLLER PUBLISHED IN THIS JOURNAL OCT. 25, 1928

October 29, 1928.

NEW ENGLAND JOURNAL OF MEDICINE,
126 Massachusetts Ave.,
Boston, Mass.

To the Editor,—

The JOURNAL is to be congratulated upon publishing the fine article by Friedrich von Müller on "The Teaching of Percussion", October 25, 1928. My interest in Müller's article leads me to offer the following.

1. Percussion is aided considerably by the tactile sense in the finger used as pleximeter; this finger becomes very acute in detecting a change in the sensation of resistance or rate of vibration of the sounds. The article did not discuss this point.

2. Müller states that the border of the relative cardiac dullness is detected equally well by heavy or light percussion, but that his personal experience is in favor of gentle percussion. My observation in teaching percussion of the heart to students, be they undergraduate or graduate, is strongly in favor of light percussion and here is the explanation which I offer them. The first change in the percussion sound that denotes the border of relative cardiac dullness is often slight and is more apparent when the original sound is of relatively small volume. It is analogous to the greater ease in which one could detect the absence of three students in a class of seven as compared to one of fifty members.

Very truly yours,
WILLIAM D. REID.

A COMPLAINT REGARDING THE REFUSAL TO ISSUE ALLEGED MALPRACTICE INSURANCE

October 30, 1928.

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE,

Dear Sir:

I wish to have the following letter published in the columns of the NEW ENGLAND JOURNAL OF MEDICINE:

I am a graduate of Tufts Medical School of the year 1908, and am a member of the Massachusetts Medical Society, a member of the East Boston Medical Society, and the Society of Examining Physicians. During the last three years I have carried my malpractice insurance through Mr. George H. Crosbie, the agent for the United States Fidelity and Guaranty Company, which is sponsored by the Massachusetts Medical Society.

Imagine my surprise on receiving a telephone call from Mr. Crosbie about ten days after the expiration of my insurance, informing me that the United States Fidelity and Guaranty Company did not care to continue my malpractice insurance because my office was located on Hanover Street in the north end of Boston—a district which his Company classifies as undesirable.

For several years I have been reading appeals from Mr. Crosbie in your JOURNAL, urging all members of the Society to support his Company, and cannot see the justice in his declining to renew my insurance simply because I am located in the north end of Boston, especially in view of the fact that I have never called upon his Company to expend one cent in my behalf.

Yours very truly,
D. A. COSTA, M.D.

369 Hanover Street, Boston.

RECENT DEATHS

BOND—DR. WILLIS GEORGE BOND, a Fellow of the Massachusetts Medical Society, died at his home in Revere, October 30, 1928.

He was born in Jefferson, Maine, 72 years ago, was a graduate of Bellevue Hospital Medical College, New York, in 1889 and settled in practice in Revere in that year. Dr. Bond had served as a member of the Revere School Board and was chairman of the Revere Building Commission, also a director of the Revere Savings and Co-öperative banks. He was a member of the Chelsea Lodge of Masons and of the Revere Odd Fellows. He is survived by his widow, a son and two daughters.

CHOATE—DR. HORACE HENRY CHOATE, a graduate of Baltimore University School of Medicine in 1899, died at his home in Worcester, October 28, 1928, aged 67, as a result of being struck by an automobile on September 27, last. He was a native of Windsor, Maine, and was the father of Alton Jay Choate, M.D., a non-resident Fellow of the Massachusetts Medical Society, now at the National Military Home at Dayton, Ohio.

BRINDAMOUR—DR. JOSEPH EDMOND BRINDAMOUR, a former Fellow of the Massachusetts Medical Society, died at his home in Holyoke, November 1, 1928, aged 62.

He was a native of Quebec and a graduate of Laval University Faculty of Medicine in 1893. He settled in Holyoke two years after graduation and became the dean of the French physicians of the city. During the World War Dr. Brindamour served as captain in the medical corps at Fort Oglethorpe, Georgia. Since 1926 he had been chairman of the Holyoke board of health. He is survived by his widow and a son, Jean Louis Edmond Brindamour, a Fellow of the Massachusetts Medical Society, practising in Holyoke.

NEWS ITEMS

APPOINTMENT OF DR. A. N. BALL—The Commissioner of the Massachusetts Department of Mental Diseases has announced the appointment of Dr. Arthur N. Ball to the position of Chief Executive Officer of the Boston Psychopathic Hospital.

APPOINTMENT OF DR. R. B. DEXTER—Dr. Roderick B. Dexter has been appointed Superintendent of the Foxboro State Hospital.

THE PROSPECTIVE FOURTH HEALTH UNIT—The ceremonies in connection with the laying of the corner stone of the fourth health unit were conducted October 29, 1928.

This will be a building costing about $250,000 located at High and Elm Streets in the Charlestown District of Boston.

Mr. G. E. Phelan, manager of the George Robert White fund presided.

The speakers were Mayor Nichols, Henry I. Harriman, Thomas H. Green, Dr. Francis X. Mahoney and Mr. Phelan.

AN HONOR TO DRS. TH. SIMON AND RENE CHARPENTIER—A complimentary dinner to Drs. Th. Simon and Rene Charpentier of Paris, France, was tendered at the University Club, Boston, Tuesday evening, October 2nd, 1928. Forty-seven members and guests attended. Dr. James V. May presided.

Dr. Simon told modestly of his work with Alfred Binet in the developing of tests for the measurement of intelligence, and commented on the unforeseen attention which the tests have attracted in this country. His remarks were interpreted by Dr. C. Macfie Campbell in his usual charming style.

Dr. Charpentier spoke briefly in English, thanking the Society on behalf of himself and Dr. Simon for the reception accorded them, and referring to the high standard set by Massachusetts in the care of the mentally ill and in the legislation governing expert testimony in criminal cases.

$350,000 LEGACY FOR RECREATION IN BOSTON—A legacy of $350,000 to provide additional recreation was left to the city of Boston by Francis Cahil, the inventor. The special uses to which the money will be put have not yet been decided on.—*Weekly Notes on Child Welfare Topics Compiled by the U. S. Children's Bureau.*

WOOD MEMORIAL FUND—The Leonard Wood Memorial Fund for the Eradication of Leprosy has been raised to more than $1,000,000 by a recent gift of $100,000 from Mr. Rockefeller. This assures the necessary buildings and supplies, but a second million is needed to increase the personnel sufficiently to eradicate the disease finally throughout the Philippines.

A SCHOLARSHIP FOR CHEMO-THERAPEUTIC RESEARCH—A new scholarship for chemo-therapeutic research at Northwestern Medical School of Chicago has just been announced by Dr. Alfred S. Burdick, President of the Abbott Laboratories.

RECOGNITION OF THE MASSACHUSETTS PSYCHIATRIC SOCIETY—The Massachusetts Psychiatric Society has been officially recognized by the American Psychiatric Association as a District of the Association. The Massachusetts Psychiatric Society is the first society to be so recognized, and so far is the only one.

NOTICES

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations:

Cytologist

Applications for cytologist must be on file with the Civil Service Commission at Washington, D. C., not later than November 28.

The examination is to fill a vacancy in the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., and vacancies occurring in positions requiring similar qualifications.

The duties are to conduct, under general supervision but largely on one's own responsibility, researches on the growth of normal and malignant cells in vitro; to study the action of light on those cells; to co-öperate in radiometric studies; to conduct other studies in cytology as may seem advisable in connection with investigations of cancer.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office of customhouse in any city.

Trained Nurse
Trained Nurse (Psychiatric)

Applications for trained nurse, and trained nurse (psychiatric) must be on file with the Civil Service Commission at Washington, D. C., not later than November 20.

The examinations are to fill vacancies in the Panama Canal Service.

UNITED STATES PUBLIC HEALTH SERVICE

Chronological List of Changes of Duties and Stations of Commissioned and Other Officers of the United States Public Health Service

September 28, 1928

Professor C.-E. A. Winslow. Directed to proceed from New Haven, Conn., to Washington, D. C., and return, on Oct. 8, to confer with the Surgeon General regarding ventilation studies being conducted by the Office of Industrial Hygiene and Sanitation.

Consultant Frank Irving Cooper. Directed to proceed from Boston, Mass., to Washington, D. C., and return, on or about October 8, to confer with the Surgeon General regarding ventilation studies being conducted by the Office of Industrial Hygiene and Sanitation.

Surgeon L. R. Thompson. Directed to proceed from Washington, D. C., to Johnstown, Pa., and return, during the week of October 7, in connection with field investigations of industrial hygiene. Also directed to proceed on October 1, to New York, Boston, Mass., and such places in Connecticut as may be necessary, and return, in connection with field investigations of industrial hygiene.

October 2, 1928

Surgeon Edward Francis. Directed to proceed from Washington, D. C., to Boston, Mass., on Nov. 1, to attend meeting of the State health officers and animal control authorities of the New England States and New York, to discuss the question of tularemia.

CHANGE OF STATION IN PUBLIC HEALTH SERVICE

A. A. Surgeon E. Blanche Sterling. Directed to proceed from Washington, D. C., to Springfield, Mass., and return, in connection with field investigations of child hygiene. October 4, 1928.

DR. D. F. JONES WILL DELIVER A LECTURE BEFORE THE NEW YORK ACADEMY OF MEDICINE

On Friday afternoons a series of lectures for the general practitioner will be held by the New York Academy of Medicine. Dr. Daniel F. Jones will speak on "Carcinoma of the Colon and Rectum" on January 25, 1929.

A PROGRAM OF EDUCATIONAL ACTIVITY FOR MENTAL HYGIENE

The Massachusetts Society for Mental Hygiene announces a program of intensive educational activity for the ensuing fall and winter. It is again coöperating with the Division of University Extension of the State Department of Education in the arrangement of courses on "The Practical Applications of Mental Hygiene" for a number of cities. Arrangements have been completed for Lynn, Attleboro, Salem, Taunton, Gloucester and Brockton, in the eastern part of the state, and plans are in progress for courses in the western and central parts of the state also.

A special course of eight lectures on "Everyday Problems of the Everyday Child" will be given on Monday evenings, beginning November 5, at the Massachusetts Art School, in Boston. The lectures will be given by Dr. Douglas A. Thom and Dr. Rose S. Hardwick of the Massachusetts State Department of Mental Diseases, and by Dr. Henry B. Elkind, Medical Director of the State Society for Mental Hygiene.

—*Bulletin Massachusetts Society Mental Hygiene.*

REPORTS AND NOTICES OF MEETINGS

THE CAMBRIDGE ANTI-TUBERCULOSIS ASSOCIATION*

The needs of Cambridge for improving the public health situation with regard to tuberculosis were outlined by Dr. Murray P. Horwood of the Massachusetts Institute of Technology at the twenty-fifth annual meeting of the Cambridge Anti-Tuberculosis Association held Tuesday, October 23, at 4 o'clock, at the Phillips Brooks House of Harvard University. The proposed suggestions are the result of a survey of the local situation made by Dr. Horwood during the summer of 1927, the report on which has just been issued.

The report is divided into five sections. The first deals with the tuberculosis situation in Cambridge as determined by a careful statistical analysis of tuberculosis mortality by age, sex, color, nativity and ward distribution. The second deals with the clinical facilities available in Cambridge for the diagnosis of tuberculosis, and the evaluation of their effectiveness. The third section considers the treatment of tuberculosis in hospitals and sanatoria, including a detailed analysis of the work of the Cambridge Tuberculosis Hospital. In the fourth section, the activities of the Cambridge Anti-Tuberculosis Association are analyzed, and in the fifth section, the broad field of tuberculosis and children is given extensive treatment. Among the items considered in this section are medical inspection and school nursing in the public and parochial schools, the open air classes, the infant and pre-school child welfare activities, the summer fresh air camps, health education and the State program for combating tuberculosis as it pertains to Cambridge. The work was performed under the auspices of the Cambridge Anti-Tuberculosis Association with the consent and coöperation of the Cambridge Board of Health.

In making the analysis of tuberculosis mortality in Cambridge, Dr. Horwood included all deaths from tuberculosis occurring among Cambridge residents outside of the city, and excluded deaths from tuberculosis among non-residents occurring in Cambridge. Accordingly the death rate from tuberculosis in 1926 was found to be 80.3 per 100,000 population, a rate, which he believes compares favorably with that found in other cities of the same size in the United States. As in other cities however, the death rate from tuberculosis among negroes was considerably higher than among whites, the rate being from two to four times as high. These rates are especially high in former wards 4, 6, and 7, but surprisingly low in former ward 10, near the Porter Square section of the city. It is suggested that the better economic conditions of the negroes in this section may account for their superior resistance to tuberculosis. It is recommended that special efforts be made to combat tuberculosis among negroes where high mortality rates prevail.

The highest death rates from tuberculosis among whites were found in those wards that go to form East Cambridge and Cambridgeport. To a lesser degree, high rates were also found in North Cambridge. As in other cities, high tuberculosis death rates prevail among Newfoundlanders, Portuguese, Irish and Canadians of Irish origin. The need for concentrated efforts to combat tuberculosis among these racial groups is also emphasized.

Tuberculosis mortality among males was found to be especially high in the age groups over 25, while among females, the death rates are highest in the age groups under 25. It is also apparent that since only 1.3 to 2.4 cases of tuberculosis per death are reported annually, instead of a minimum of 5, which may be expected, the reporting of tuberculosis can be more complete.

After demonstrating that the existing tuberculosis clinic is poorly located and is inadequate and ineffective for the needs of the local tuberculosis problem, Dr. Horwood recommends the establishment of a decentralized tuberculosis clinic service which will provide four clinics in those parts of the city, where the tuberculosis problem is especially acute. In order to make these clinics effective, trained diagnosticians in tuberculosis should be appointed, and an expert consultation service provided. Furthermore, the clinics should, if possible, form a part of the service of health units or health stations provided in these sections of the city. Since the nursing service is intimately related to the successful operation of tuberculosis clinics as well as other clinics, and in order to save time, expense and unnecessary duplication of visits to the same family, it is recommended that the public health nursing service be placed on a generalized basis, with a superintendent and four supervisors in charge, and that all the nurses be required to wear public health

*Abstract of the report of a Survey of Public Health and Tuberculosis Needs of Cambridge by Dr. Murray P. Horwood.

nursing uniforms, as is now the practice in all communities doing progressive health work. Most important of all, is the recommendation that the official health work in Cambridge be headed up by a full time health officer, trained and experienced in public health work, and qualified as well, by the necessary tact and personality to organize and conduct a progressive public health program effectively. Such a health officer, should, of course, serve under the Board of Health.

With regard to the hospitalization of cases of tuberculosis, Dr. Horwood feels that in this important field there is much for which Cambridge citizens may well be proud. It is his opinion however, that the hospital facilities of the city should be unified under one hospital board of trustees, and that the Board of Health should be relieved of the task of hospital administration. It is also recommended that the tuberculosis hospital be fully equipped to provide x-ray, dental and eye, ear, nose and throat service at the institution, and that the hospital should be used exclusively for Cambridge residents. More attention should be directed to the greater hospitalization of negro patients and greater use should be made of the excellent State sanatorium facilities for the hospitalization of tuberculosis children. Greater emphasis should also be placed on the hospitalization of early and favorable adult cases of tuberculosis, as well as health education, occupational therapy and placement work for arrested cases. Since the former day camp, which is now used as a hospital annex, is employed for chronic cases no longer in the active stages of tuberculosis, it is recommended that the annex be abandoned and the patients placed under proper supervision in their homes. Various other recommendations are made concerning sterilizing facilities, sun porches, visiting hours, the practice of going home periodically, heliotherapy and other details which bear on the problem of effective treatment of tuberculous patients.

It is one of the most respected and effective voluntary health agencies in the city. It has conducted an extensive program of personal and popular health education, has provided for children requiring preventorium treatment, has aided in the organization of the summer fresh air camps, dental clinics, and tuberculosis clinic and has recently been conducting one of the best summer health camps in the United States. It has conducted effective health educational work in the public and parochial school, and has aided in building up the resistance of the pre-tuberculosis child. Dr. Horwood recommends that some of these activities be further extended and that a special effort be made to combat tuberculosis in industry—an important, but as yet neglected field of endeavor.

The greater protection of child health in the community demands certain important changes in the school health supervision which is now provided. It is recommended that a director of school medical inspection be appointed on a half time basis, and that the eight grade school physicians and the high school physician be likewise employed on a half time basis. The annual examination of the children in the first, fourth and eighth grades should be made with the clothing removed to the waist, and should be sufficiently thorough so that each examination will require from ten to fifteen minutes. It is estimated that 250 children in the public schools and 120 in the parochial schools require treatment in special health classes, and these children should receive three thorough medical examinations during the school year to determine their progress. Special health classes providing rest, extra nourishment and complete health supervision are recommended to take the place of the present ungraded open air classes. It is also maintained that the school dental program should be made preventive rather than reparative as it is at present, and that in order to achieve this end greater emphasis be placed on the relationship of nutrition to sound dental health that the dental clinics be removed from the schools and placed with the infant welfare and pre-school child clinics and that the reparative work done be limited to the children below the fifth grade. The dental program should be extended to include the pre-natal, infant and pre-school periods of life. Emphasis is also placed on the necessity of providing suitable washing facilities in all the schools, including satisfactory facilities for dispensing soap and paper towels. The importance of extending the excellent course in home hygiene to include all the girls in the high school is also emphasized.

While the summer fresh air camps doubtless filled a very necessary need when they were first organized, it is believed that with the extensive facilities now available for providing free summer vacations for poor children, the need for continuing the camps is very doubtful. This is especially true, since their health building value, in the opinion of the report is certainly limited. It is recommended that in place of the summer health camps the playground facilities be extended during the summer months and sufficient supervisors be provided to keep the children off the streets. Those children who are pre-tuberculous and who require free vacations, should be cared for by the agencies already in existence, whose aim it is to satisfy these social needs.

Since health education is one of the foundation stones in the modern community program for promoting the public health, it is also recommended that a supervisor or director of health education be appointed to organize or supervise a suitable program of health education in the schools.

The infant mortality rate of Cambridge is one of the lowest in this country. It reflects the excellent work which the Board of Health has done in this important field of child conservation. Further reduction in infant mortality can doubtless be accomplished by placing all the infant welfare clinics on the same high plane of efficiency as that found at four stations in the city and by extending the clinics to include the pre-school group. An effort should be made to have each child free of physical defects before he enters school, and immunized against small pox and diphtheria. Greater emphasis should also be placed on the thorough examination of each infant and pre-school child brought to the clinics, and on effective health education in the homes.

The report represents a detailed and thoughtful program, for the protection and promotion of the public health in Cambridge. The Board of Health has given serious consideration to all of the recommendations and their agreement with those that are of outstanding importance is indicated in the recommendations found in the annual report of the Board of Health which has recently been issued.

BOARD OF MANAGERS

Hilbert F. Day, M.D., President.

Mrs. Rufus P. Williams, Felix McGirr, M.D., Vice-Presidents.

Miss Louise W. Jackson, Secretary.
Elmer H. Parmelee, Treasurer.

Rev. J. Thayer Addison, Edward A. Andrews, Mrs. Percy R. Bridgman, Mrs. N. Henry Black, Henry R. Brigham, Mrs. Raymond Calkins, Eugene A. Darling, M.D., Andrew F. Downing, M.D., Arthur Drinkwater, M. E. Fitzgerald, Thomas Hadley, Rev. Augustin F. Hickey, Arthur N. Holcombe, Eliot Hubbard, Jr., M.D., Mrs. Edward Ingraham, Harry W. Joel, Mrs. Oliver D. Kellogg, Mrs. Frederick H. Lovejoy, Mrs. George A. Macomber, Paul H. Means, M.D., Mrs. Clement G. Morgan, Mrs. Thomas Reed Powell, Benjamin Roseman, Mrs. Charles R. Sanger, Mrs. E. Lawrence Shaw, Mrs. Joseph G. Thorp, Mrs. Charles P. Vosburgh, Joseph M. Wadden, M.D., Mrs. Charles F. Whiting, Mrs. Henry Wise.

BOSTON MEDICAL HISTORY CLUB

The first meeting of the Boston Medical History Club was held at the Boston Medical Library on Monday evening, October 22nd, Dr. Edward W. Taylor, the President, presiding. The meeting was a memorial to the late Drs. J. Collins Warren and John Warren and there was a large attendance of physicians, friends and members of the Warren family.

Dr. Taylor, in introducing the first speaker, Dr. David Cheever, said in part: "That it is seldom that one family has exerted so strong an influence in medicine in any one community as the Warren family. This influence has extended through five generations of physicians all intimately identified with the upbuilding of a high standard of medical education, research, and practice. The direct medical line has now come to an end with the recent untimely death of Dr. John Warren. It is most fitting that the first meeting of the year should be devoted to the memory of this notable family, its history and achievements."

Dr. Cheever, in his address entitled, "The Warren Stock and its Scions", reviewed the history and accomplishments of the first Warren physician's beginning with General Joseph Warren of Bunker Hill fame, who first practiced in Boston in 1764, and his brother, Dr. John Warren; John C. Warren, the son of John, and J. Mason Warren, the son of John C. Warren.

Dr. Frederick C. Shattuck read a short paper, interspersed with characteristic stories, on Dr. J. Collins Warren who died last year.

Dr. John L. Bremer then spoke of Dr. John Warren, his fellow professor at the Harvard Medical School.

Dr. Harvey Cushing paid a glowing tribute to Dr. J. Collins (Col.) Warren who was always a friend to the younger physicians. Dr. Cushing described his visits to Dr. Warren's house on Beacon Street where he delighted in taking foreign visitors on a sort of pilgrimage. Dr. Warren enjoyed showing all the family treasures, including the sword of General Joseph, the Copley, Stuart and Rembrandt portraits, the Avery tapestry, and many other things too numerous to mention, ending with the famous collection of Sea Serpent literature.

Sir Charles Ballance of London, who was present as a guest of Dr. Cushing, honored the Club with a few remarks in which he said in part, "That he considered it a privilege to be present at the memorial meeting and was immensely interested in the tribute to Dr. J. Collins Warren". Sir Charles called attention to a work of Dr. Warren's called "The Healing of the Arteries" which had led him to devote many years of his life to the study of the surgery of the arteries. Sir Charles had called on Dr. Warren at his house and was greatly impressed with the courtesy extended to a junior physician.

James F. Ballard closed the meeting with an exhibition of some important Warren memorabilia, including a unique metal statute of General Joseph Warren; the scalpel and probe which Dr. John C. Warren used in the first operation under Ether at the Massachusetts General Hospital; some volumes of the Warren family papers loaned by the Massachusetts Historical Society and a very fine extra-illustrated set of the biographies of the first Dr. John and his son Dr. John C., loaned by Mr. Charles Goodspeed.

SUFFOLK DISTRICT MEDICAL SOCIETY

The stated meeting of the Suffolk District Medical Society was held Wednesday, evening October 31, 1928, in the amphitheater of the Children's Hospital, 300 Longwood Avenue, Boston.

The meeting was called to order at 8:15 P. M. by Dr. Lincoln Davis, President. There were about 150 people present.

The minutes of the last meeting were read and accepted. The name of Dr. Arthur W. Allen was proposed as a member of the Nominating Committee and he was unanimously elected. The name of Dr. William T. S. Thorndike was proposed as a member of the Auditing Committee and he was unanimously elected.

After the business meeting the following members of the Staff of the Children's Hospital presented papers. "Sepsis of Bones and Joints," Dr. Robert B. Osgood; "Moving Pictures as Hospital Records," Dr. Kenneth D. Blackfan; "Fractures of the Lower End of the Humerus," Dr. William E. Ladd; "Foreign Bodies in the Bronchus," Dr. Lyman G. Richards.

The meeting adjourned about 10 P. M.

ARTHUR H. CROSBIE, *Secretary*.

THE HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Amphitheater of the Peter Bent Brigham Hospital, on Tuesday, November 13, at 8:15 P. M. The program is as follows:

Presentation of Cases; "The Use of Artificial Respiration in Poliomyelitis," Dr. Stewart H. Clifford; "A New Apparatus for Applying Artificial Respiration," Phillip Drinker.

WILLIAM P. MURPHY, *Secretary*.

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE

The Massachusetts Society for Mental Hygiene will hold its annual meeting at the Twentieth Century Club, 3 Joy Street, on Friday, November 16, following a luncheon at 1 o'clock.

Speakers: Elliott Dunlap Smith, Professor of Industrial Engineering, Yale University. Subject—Mental Hygiene and Industrial Management.

Robert W. Kelso, Executive Secretary, Boston Council of Social Agencies. Subject—Mental Hygiene as a Primary Factor in Social Work.

Honorable Herbert C. Parsons, Commissioner of Probation, State of Massachusetts. Subject—The Kinship Between Mental Hygiene and Probation.

Luncheon tickets, $1.50. Make reservations before November 13.

MASSACHUSETTS GENERAL HOSPITAL

Staff Meeting, Moseley Memorial Building, Thursday evening, November 8, 1928, at 8:15 P. M. The program will be given by the Tumor Clinic.

1. Demonstration of Cases.
2. Carcinoma of Uterus and Ovary. Dr. Lincoln Davis and Dr. J. V. Meigs.
3. Carcinoma of Breast. Drs. R. B. Greenough, G. W. Holmes and E. M. Daland.
4. Bone Sarcoma. Dr. C. C. Simmons.
5. Lympho-blastoma of Bone. Dr. Richard Dresser.

This is the first of a series of monthly Staff Meetings that will be held on the second Thursday of each month.

Physicians, medical students and nurses are cordially invited to attend.

COMMITTEE ON HOSPITAL MEETINGS.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

The November meeting will be held at the Towanda Club of Woburn on Wednesday the 14th. Luncheon will be served at 1 P. M. After a short business meeting Dr. Frank D. Adams of Boston will speak on "The Modern Treatment of Pneumonia". His discussion will dwell particularly upon the status and technique of the serological treatment.

ALLAN R. CUNNINGHAM, *Secretary.*

THE WINTER TRAINING COURSE FOR OFFICERS OF THE MEDICAL SECTION

Headquarters First Corps Area—Office of the Corps Area Surgeon, Army Base, Boston, Mass.

THE NEW ENGLAND JOURNAL OF MEDICINE:

The Winter Training Course for Officers of the Medical Section, Organized Reserves, U. S. Army, in Boston and vicinity will be held on November 14, 1928, at 8:00 P. M., at the University Club, 40 Trinity Place, Boston, Mass.

Officers attending the meeting will be given credit for participation in Military Activities.

WM. A. MURPHY, Major, M. C., (Dol).

GREATER BOSTON MEDICAL SOCIETY

A regular meeting of the Society will be held on Wednesday, November 14, 1928, at the Beth Israel Hospital.

PROGRAM

James P. O'Hare, M.D.: "Nephritis and Nephrosis."

Discussion: Louis J. Ullian, M.D., Saul Berman, M.D. (From standpoint of Nephritis in Toxemias of Pregnancy.)

Demonstration of Hospital Cases by members of the Staff of the Beth Israel Hospital.

All medical students and nurses are cordially invited.

ROBERT SLATER, M.D., *Secretary.*
68 Bay State Road, Boston.

BERKSHIRE COUNTY MEDICAL SOCIETY

The next meeting of the Berkshire County Medical Society will be held November 26th at the Hotel Wendell, Pittsfield. The speaker will be Dr. Irving W. Potter, of Buffalo, N. Y. Subject:—"The Technique of Elective Version and Repair of Birth Canal Injuries Immediately Following Delivery." Discussion will be opened by Dr. George M. Shipton. Dr. M. H. Walker will also discuss Dr. Potter's paper.

TRUDEAU SOCIETY

The next meeting of the Trudeau Society of Boston will be held on Tuesday evening, November 13, 1928, at 8:15 p. m., in Sprague Hall, Boston Medical Library, 8 The Fenway, Boston.

The speaker will be Dr. Harlan F. Newton of Boston; subject: "Observations of the Surgical Treatment of Pulmonary Tuberculosis in Europe."

Physicians, medical students and nurses are cordially invited to attend this meeting.

RANDALL CLIFFORD, *Secretary.*

SOCIETY MEETINGS

Combined Meetings of the Boston Medical Library, the Suffolk District Medical Society, the Middlesex South District Medical Society and the Norfolk District Medical Society

November 21, 1928—Meeting in association with Norfolk District Medical Society. Dr. Frederick W. O'Brien will read the paper entitled "Recent Advances in Physical Therapy" and Dr. Edwin T. Wyman will open the discussion.

December 19, 1928—Surgical Section. Symposium on Stomach Surgery. "Operative Procedures: indications and Results," Dr. R. H. Miller; "Selection and Management of Patients for Gastric Surgery," Dr. H. M. Clute; "Acute Perforations of Stomach and Duodenum," Dr. W. R. Morrison; "Results of a Series of Stomach Operations," Dr. E. S. Emery, Jr. Discussion by Doctors David Cheever, Edward P. Richardson, Frank H. Lahey and I. J. Walker.

January 30, 1929—General meeting in association with Boston Medical Library. "Heredity," Professor George H. Parker, Harvard University.

February 27, 1929—Medical Section. "The Newer Knowledge of Nutriment," Dr. Lafayette B. Mendel (exact title to be submitted later), Yale University Medical School.

March 27, 1929—Meeting in association with Middlesex South District Medical Society. Clinical and Experimental Studies of Obstructing Jaundice and Its Complications. Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

The medical profession is cordially invited to attend all these meetings.

November 8, 1928—Massachusetts General Hospital, Staff Meeting. Detailed notice appears elsewhere on this page.

November 13, 1928—Harvard Medical Society. Complete notice appears on page 964.

November 13—Trudeau Society. Complete notice appears on page 799, issue of October 18.

November 14—Greater Boston Medical Society. Detailed notice appears elsewhere on page 913, issue of November 1.

November 14, 1928—The Winter Training Course for Officers of the Medical Section. Complete notice appears elsewhere on this page.

November 16, 1928—Massachusetts Society for Mental Hygiene. Detailed notice on page 964.

November 26—Berkshire County Medical Society. Detailed notice appears elsewhere on this page.

November 26-28—The National Society for the Prevention of Blindness. For detailed notice see .

December 3-7—Radiological Society Convention. Detailed notice appears on page 712, issue of May 17.

DISTRICT MEDICAL SOCIETIES

Barnstable District Medical Society

Schedule of Meetings: February 7, 1929, May 2, 1929.

Bristol North District Medical Society

April 18, 1929—Spring meeting.

Essex North District Medical Society

January 2, 1929 (Wednesday)—Semi-annual meeting at Haverhill, at 12:30 P. M.

May 1, 1929 (Wednesday)—Annual meeting at Lawrence, at 12:30 P. M.

May 2, 1929 (Thursday)—Censors meet at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. (Tel. 3430.)

Essex South District Medical Society

December 5, 1928 (Wednesday)—Beverly Hospital. Clinic at 5 P. M. Dinner at 7 P. M. Speaker: Dr. Fred H. Albee, Sc.D., F.A.C.S., Professor of Orthopaedic Surgery, New York Post Graduate Medical School. Subject: Automatic Machinery in Bone Surgery. Discussion by Drs. H. C. Bean of Salem and C. Damsky of Lynn (10 minutes each). Discussion from the floor.

Franklin District Medical Society

Meetings will be held on the second Tuesday of November, January, March and May.

Hampshire District Medical Society

December 12—Address by Dr. Philemon Truesdale.

March 13, 1929—Address by Dr. George E. Gage, Professor of Bacteriology and Physiology at the Massachusetts State College.

Middlesex East District Medical Society

The following schedule of meetings has been arranged for the coming year:

November 14—Woburn. See page 965 for complete notice.
January 16—Wakefield.
March—Reading.
May—Melrose.

Subjects and speakers to be arranged by committees in each city or town.

Middlesex North Medical Society

The winter meeting will be held the last Wednesday in January.

The annual meeting will be held the last Wednesday in April.

Middlesex South District Medical Society

March 27, 1929—Joint meeting with the Suffolk and Norfolk Districts.

April, 1929—Annual meeting. Definite date to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District Medical Society for the 1928-29 Season. The schedule below will be adhered to as strictly as possible. The carrying out of the proposed plan will, of course, depend upon the acceptances of invitations extended to the speakers. Minor changes may be necessary.

November 21—Boston Medical Library. In combination with Suffolk District and Middlesex South District Societies. Subject, Recent Advances in Physical Therapy. Dr. Frederick W. O'Brien and Dr. Edwin T. Wyman.

January 29—Roxbury Masonic Temple. Subject, Treatment of Varicose Veins by the Injection Method—Dr. E. E. O'Neil. Dr. Homans will open the discussion.

February 25—Roxbury Masonic Temple. Dr. W. R. Ohler. Subject to be announced. Discussion to be opened by Dr. A. A. Hornor.

March 29 — Roxbury Masonic Temple. Subject and speakers to be announced.

May, 1929—Annual meeting program to be announced.

The Censors of the Society meet November 1, 1928, and May 9, 1929, at the Roxbury Masonic Temple, Warren Street, Roxbury, at 4 P. M., for the examination of candidates.

Plymouth District Medical Society

November 15, 1928—Meeting at the Lakeville Surgical Sanatorium, Lakeville, Mass. Special invitation of Superintendent Dr. Leon A. Alley; speakers who will address the meeting on special orthopedic subjects. Dinner served by the management of the Sanatorium.

January meeting, Thursday, January 17, 1929, at 11 A. M., Brockton Hospital, Brockton, Mass. Speakers: Dr. Michael F. Fallon, Chief of Surgical Staff, St. Vincent's Hospital, Worcester, Mass.; Dr. Edw. J. Denning, Chief of Medical Staff, Carney Hospital, Boston, Mass.; subject to be announced later.

March meeting at the Moore Hospital, Brockton, Mass., March 21st, program to be announced later.

April meeting at the Commercial Club, Brockton, April 18th, at 6 P. M. Annual Oration by Dr. Ralph C. McLeod, Orator; dinner.

Suffolk District Medical Society

March 27, 1929—Meeting in association with Middlesex South District Medical Society. "Clinical and Experimental Studies of Obstructive Jaundice and Its Complications," Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

LINCOLN DAVIS, M.D., President.
ARTHUR H. CROSBIE, M.D., Secretary.

Worcester District Medical Society

November 14, 1928—Chamber of Commerce, Worcester. Genito-Urinary and Dermatological Program.
December 12, 1928—Chamber of Commerce, Worcester. Orthopedic Symposium.
January 9, 1929—Chamber of Commerce, Worcester. Dr. Leon T. LeWald of New York City.
February 13, 1929—Worcester State Hospital. Program to be announced.
March 13, 1929—Worcester City Hospital. Dedication of New Nurses' Home. Speaking program to be announced.
April 10, 1929—Grafton State Hospital. Program to be announced.
May 8, 1929—Annual meeting. Worcester Country Club.

Worcester North District Medical Society

January 22, 1929 (Tuesday)—At Henry Heywood Memorial Hospital, Gardner, by invitation. Program by Staff.

Annual meeting the fourth Tuesday in April.

BOOK REVIEWS

Collected Papers of the Mayo Clinic and the Mayo Foundation. Vol. XIX, 1927. W. B. Saunders Co., 1928.

As is stated in the Introduction, the annual publication of the Collected Papers of the Mayo Clinic and Foundation is intended primarily for the benefit of the general surgeon and diagnostician. With this in view, a careful selection of the articles that will especially appeal to this group is made from among the total publications; these are printed in full and the remainder abstracted or referred to by title. This plan enhances the value of the volume for the practitioner, while retaining its usefulness as a reference work.

The material presented is too voluminous to be reviewed here in any detail. Short of a visit to Rochester, the physician or surgeon can best obtain an insight into the activities of this great medical center by a perusal of these yearly volumes: whatever his special field, he is likely to find here much that will excite his interest.

Prescribing Occupational Therapy by WILLIAM RUSH DUNTON, JR.: Charles C. Thomas, Springfield, Illinois-Baltimore, Maryland 1928.

In this little book of less than 150 pages, Dr. William Rush Dunton, instructor in Psychiatry at Johns Hopkins University, establishes occupational therapy on a sound basis. This basis is the proved physiologic effect of emotions. If pain, rage, fear, etc., induce, as Cannon has demonstrated, a chain of physical adaptations made up of organic links, it would seem fair to assume that interest, contentment, pleasure may be counted upon to induce organic changes favorable to recovery. The author indicates the special types of occupational therapy applicable to cases of mental disease, general medical and surgical cases, orthopaedic, cardiac and tuberculous cases; to children and to patients continuously confined to bed. He recognized that the function of the trained occupational therapist is to act as the technical assistant to the physician. The physician can best appreciate the personality of the patient and his fatigue point. This is of utmost importance. Dunton points out quite pertinently, however, that the physician who is to ask for the assistance of the occupational therapist must inform himself concerning the scope and methods of occupational therapy if he is to ask intelligently. The book is not a technical textbook, but a psychological and philosophical review of this new and valuable aid of functional rehabilitation.